

# TOSHIBA

FILE NO. 810-200413

## SERVICE MANUAL

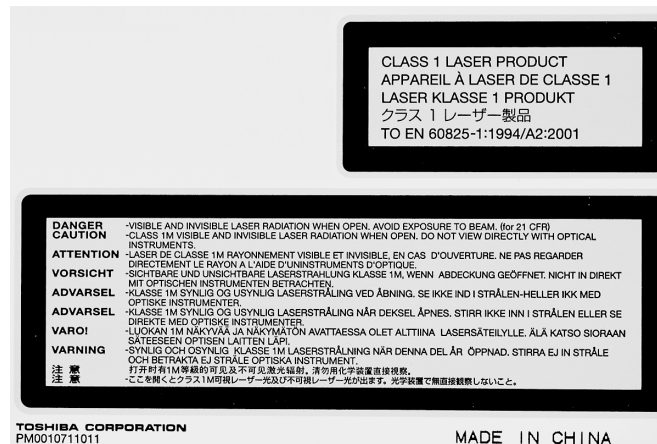


## DVD VIDEO RECORDER

***D-R2SU***  
***D-R2SC***  
***D-KR2SU***



## LASER BEAM CAUTION LABEL



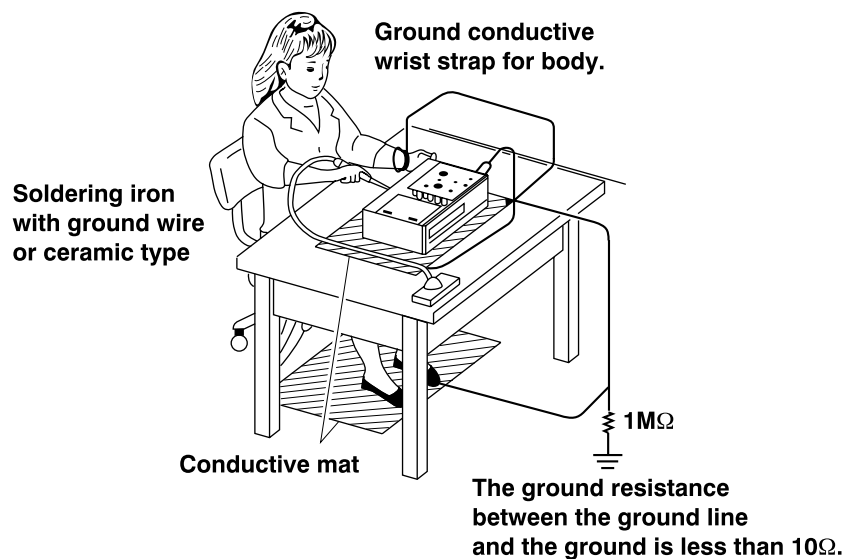
When the power supply is being turned on, you may not remove this laser cautions label. If it removes, radiation of a laser may be received.

## PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electricity.

Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity.

And also, the LSI and IC are same as above.



## SAFETY NOTICE

### SAFETY PRECAUTIONS

#### LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having  $5000\ \Omega$  per volt or more sensitivity.

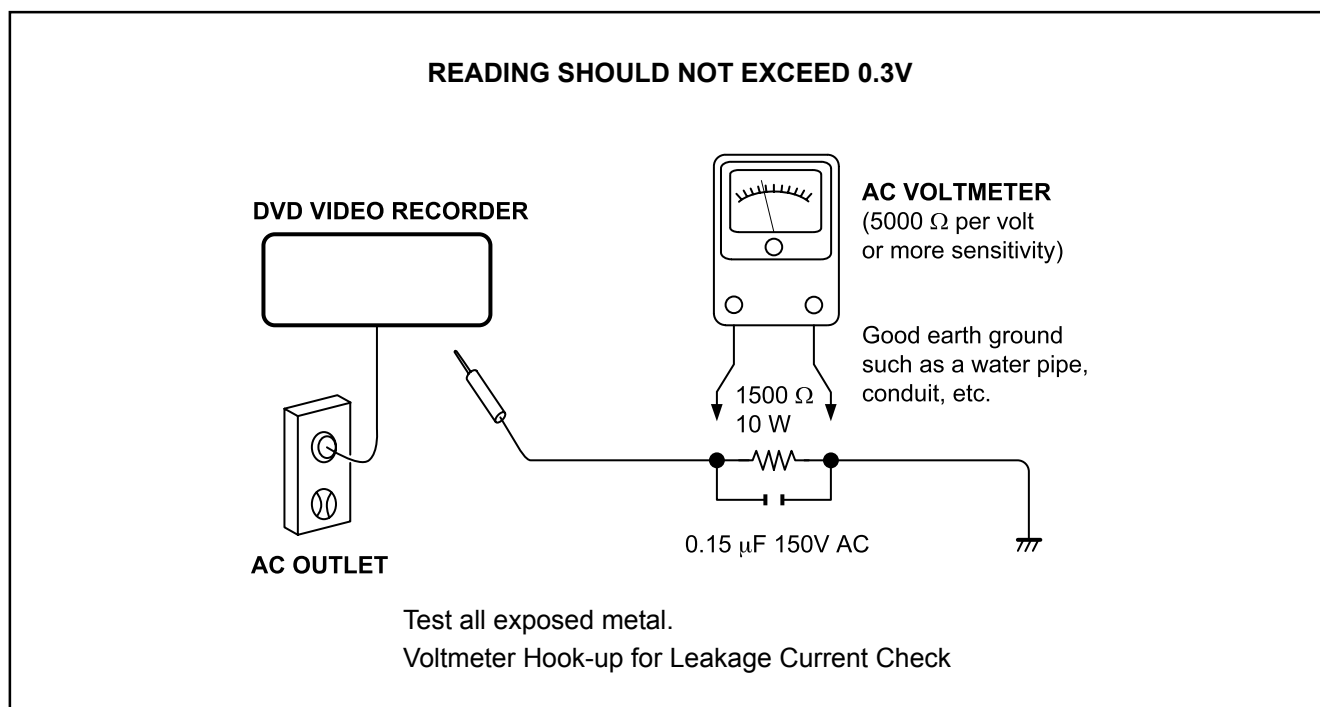
Connect a  $1500\ \Omega$  10 W resistor, paralleled by a  $0.15\ \mu\text{F}$  150V AC capacitor between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of cabinet (antennas, handle bracket, metal cabinet screwheads, metal overlays, control shafts, etc.).

Measure the AC voltage across the  $1500\ \Omega$  resistor.

The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.3 V. A reading exceeding 0.3 V indicates that a dangerous potential exists, the fault must be located and corrected.

Repeat the above test with the DVD VIDEO RECORDER power plug reversed.

NEVER RETURN A DVD VIDEO RECORDER TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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| <b>SAFETY PRECAUTION</b><br><b>NOTICE</b><br><b>ABBREVIATIONS</b><br>1. Integrated Circuit (IC)<br>2. Capacitor (Cap)<br>3. Resistor (Res) | <br><b>4. EXPLODED VIEWS</b><br>4-1. Packing Assembly<br>4-2. Chassis Assembly<br><b>5. PARTS LIST</b> |
|--|--|



# SECTION 1 GENERAL DESCRIPTIONS

## 1. OPERATING INSTRUCTIONS

Please refer to the owner's manual about the contents.

## 2. LOCATION OF MAIN PARTS

### 2-1. Location of Main Parts

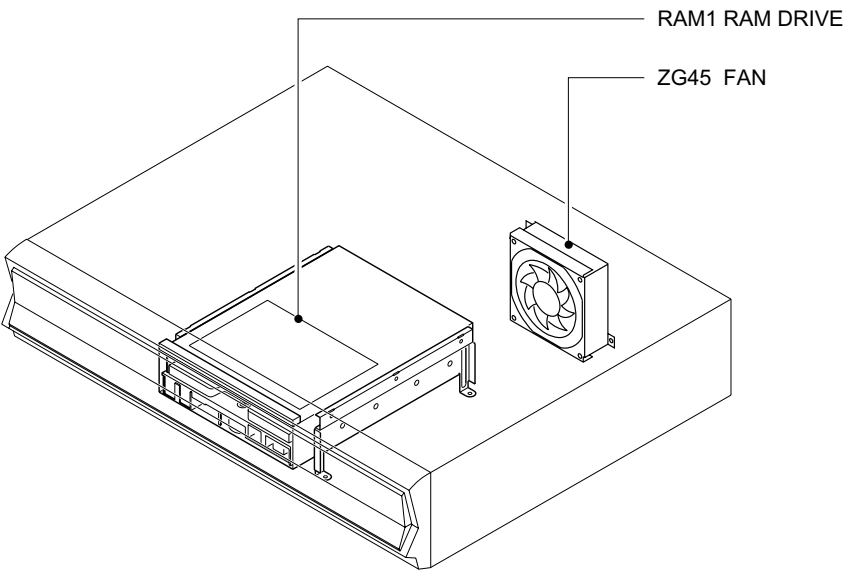


Fig. 1-2-1

### 2-2. Location of PC Boards

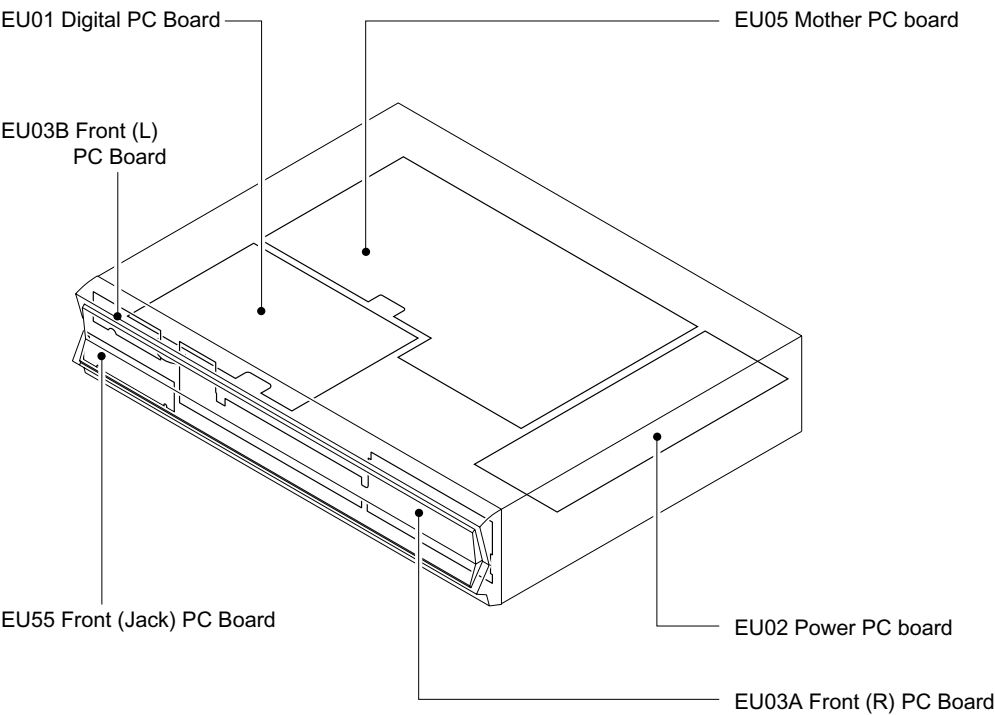


Fig. 1-2-2

# SECTION 2

## PART REPLACEMENT AND ADJUSTMENT PROCEDURES

### CAUTIONS BEFORE STARTING PART REPLACEMENT

Electronic parts are susceptible to static electricity and may easily be damaged, so do not forget to ground as required. Many screws are used inside the unit. To prevent the screws from missing or dropping, etc. always use a magnetized screwdriver in servicing. Several kinds of screws are used and some of them need special cautions. That is, take care of the tapping screws securing molded parts and fine pitch screws used to secure metal parts. If they are used improperly, the screw holes will be easily damaged and the parts can not be fixed.

## 1. REPLACEMENT OF MECHANICAL PARTS

### 1-1. Cabinet Replacement

#### 1-1-1. Top Cover

1. Remove seven screws (1), then remove the top cover (2).

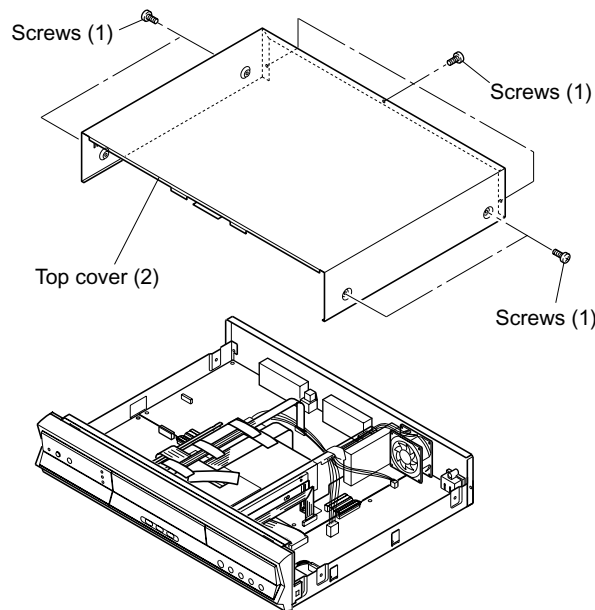


Fig. 2-1-1

### 1-1-2. Front Panel

1. Remove the top cover. (Refer to item 1-1-1.)
2. Peel off three tapes (1) and disconnect the flexible cable (2).
3. Disconnect the flexible cable (3) and two connectors (4).
4. Remove the screw (5).
5. Remove two screws (6).
6. Release four claws, then remove the front panel (7).

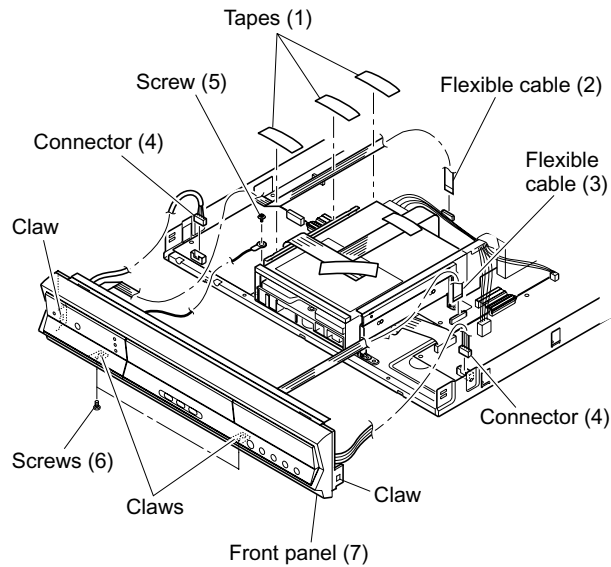


Fig. 2-1-2

### 1-1-3. Tray Door

1. Remove the front (R) PC board and front (L) PC board. (Refer to item 1-2-4.)
2. Remove the spring (1).
3. Remove the tray door (2) while slightly bending it.

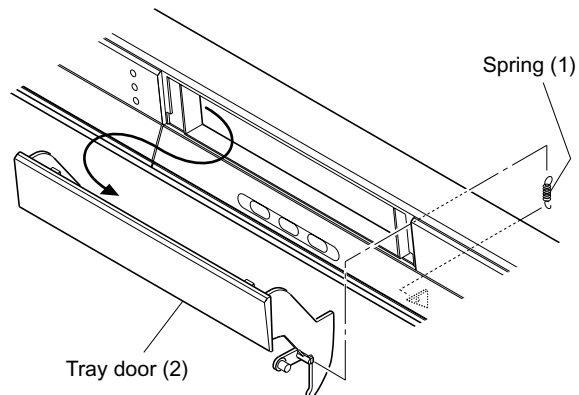


Fig. 2-1-3

#### 1-1-4. Operation Panel Door

1. Open the operation panel door (1).
2. Release two claws and unhinge the door (1).

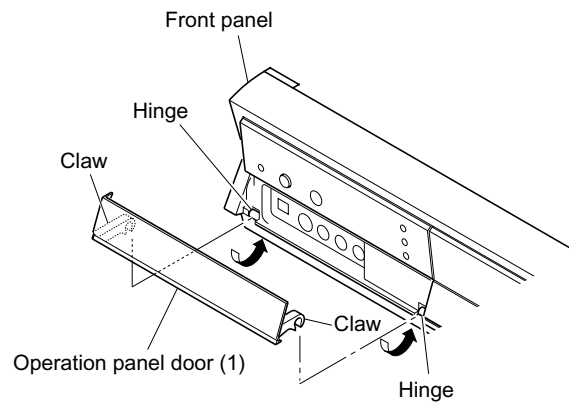


Fig. 2-1-4

#### 1-1-5. RAM Drive

1. Peel off four tapes (1).
2. Disconnect two flexible cables (2).
3. Disconnect the connector (3).
4. Remove two screws (4) and acrylic board (5).
5. Remove four screws (6), then remove the RAM drive (7).

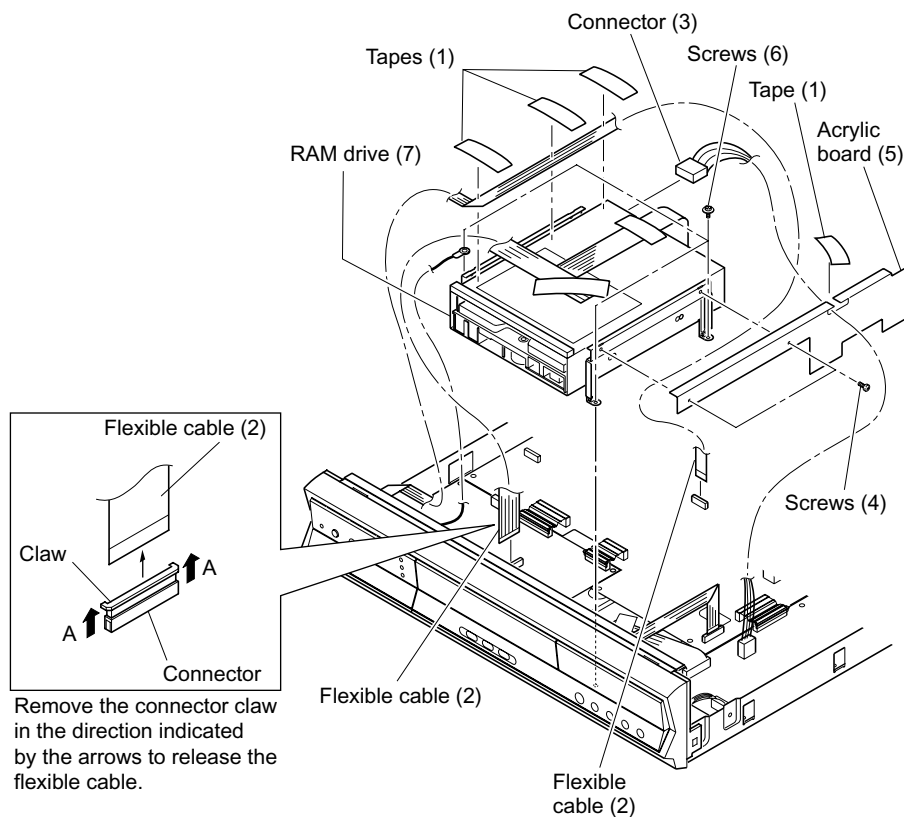


Fig. 2-1-5

### 1-1-6. Fan

1. Peel off the tape (1).
2. Disconnect the connector (2).
3. Remove four screws (3) and the fan (4).

#### Note:

- After replacing the fan (4), attach the tape (1) as it was.

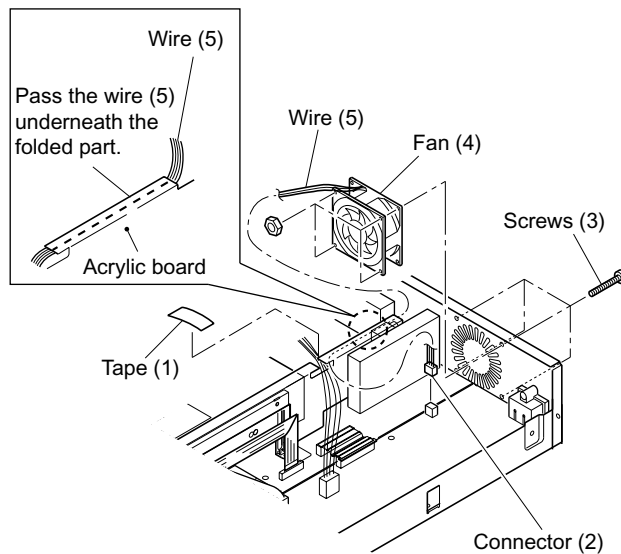


Fig. 2-1-6

### 1-1-7. Rear Panel

1. Remove twelve screws (1), then remove the rear panel (2).

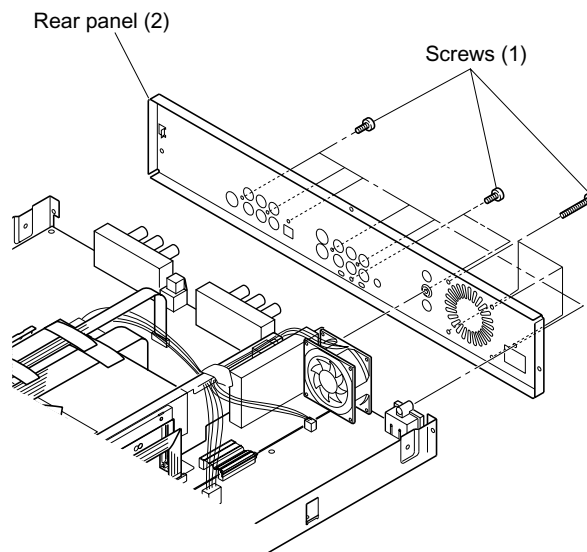
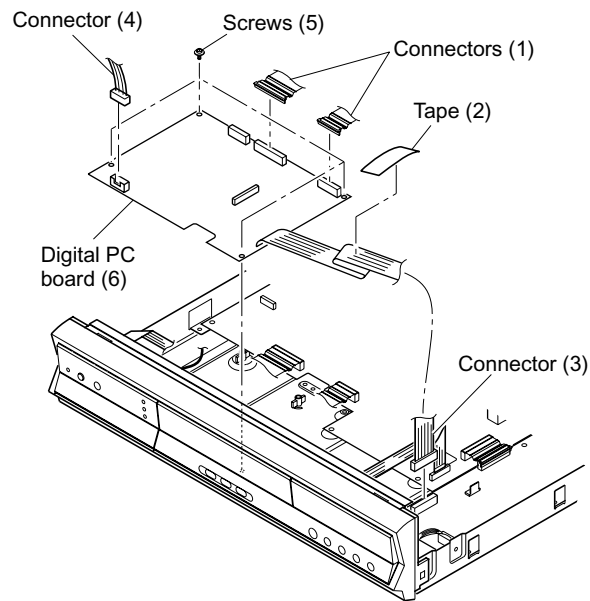


Fig. 2-1-7

## 1-2. PC Board Replacement

### 1-2-1. Digital PC Board

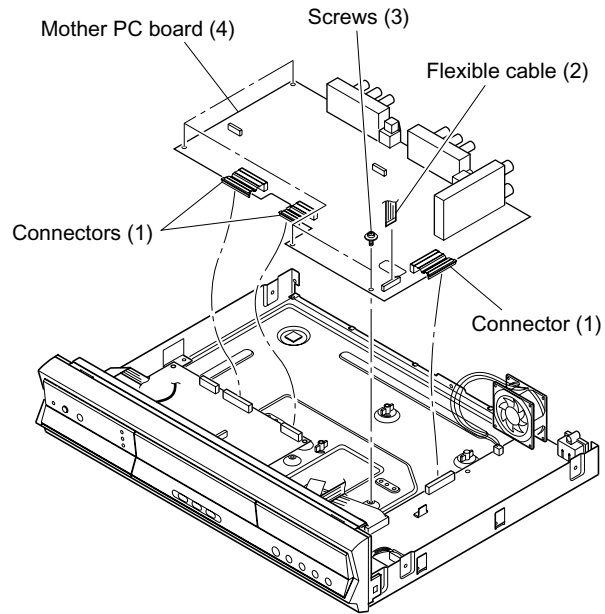
1. Remove the RAM drive. (Refer to 1-1-5.)
2. Disconnect two connectors (1).
3. Peel off the tape (2), then disconnect the connector (3).
4. Disconnect the connector (4).
5. Remove four screws (5) and the digital PC board (6).



**Fig. 2-1-8**

### 1-2-2. Mother PC Board

1. Remove the RAM drive. (Refer to item 1-1-5.)
2. Remove the rear panel. (Refer to item 1-1-7.)
3. Disconnect three connectors (1).
4. Disconnect the flexible cable (2).
5. Remove four screws (3), then remove the mother PC board (4).



**Fig. 2-1-9**

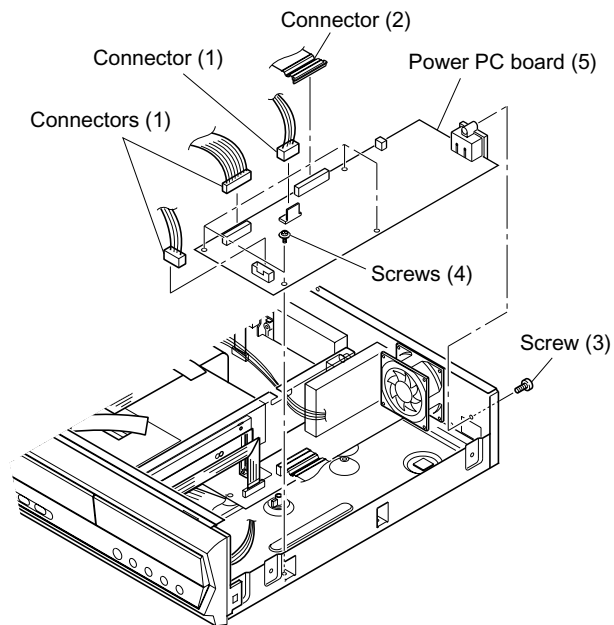


### 1-2-3. Power PC Board

#### Cautions :

- **Danger of explosion if battery is incorrectly replaced.**
- **Replace only with the same or equivalent type.**

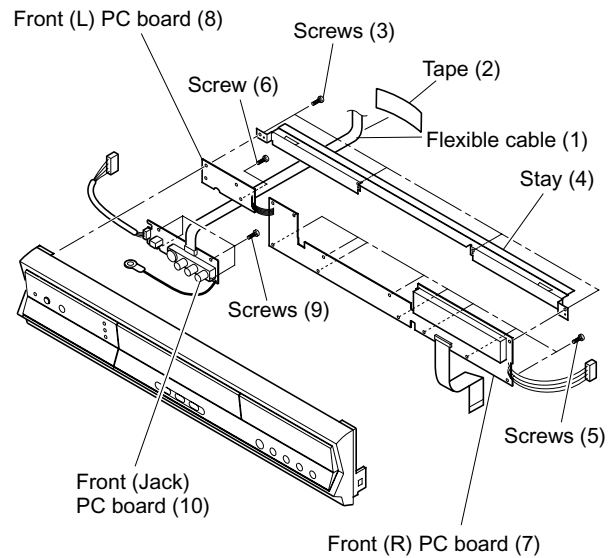
1. Disconnect three connectors (1).
2. Disconnect the connector (2).
3. Remove the screw (3), four screws (4) and the power PC board (5).



**Fig. 2-1-10**

#### 1-2-4. Front (R), Front (L), Front (Jack) PC Board

1. Remove the front panel. (Refer to item 1-1-2.)
2. Disconnect the flexible cable (1), then peel off the tape (2).
3. Remove four screws (3), then remove the stay (4).
4. Remove eight screws (5) and the screw (6), then remove the front (R) PC board (7) and front (L) PC board (8).
5. Remove four screws (9), then remove the front (Jack) PC board (10).



**Fig. 2-1-11**

# SECTION 3

## SERVICING DIAGRAMS

### 1. CIRCUIT SYMBOLS AND SUPPLEMENTARY EXPLANATION

#### 1-1. Precautions for Part Replacement

- In the schematic diagram, parts marked  $\triangle$  (ex.  $\triangle$  F801) are critical part to meet the safety regulations, so always use the parts bearing specified part codes (SN) when replacing them.
- Using the parts other than those specified shall violate the regulations, and may cause troubles such as operation failures, fire etc.

#### 1-2. Solid Resistor Indication

<b>Unit</b>	None ..... $\Omega$ K ..... $k\Omega$ M ..... $M\Omega$
<b>Tolerance</b>	None ..... $\pm 5\%$ B ..... $\pm 0.1\%$ C ..... $\pm 0.25\%$ D ..... $\pm 0.5\%$ F ..... $\pm 1\%$ G ..... $\pm 2\%$ K ..... $\pm 10\%$ M ..... $\pm 20\%$
<b>Rated Wattage</b>	(1) Chip Parts None ..... 1/16W (2) Other Parts None ..... 1/6W Other than above, described in the Circuit Diagram.
<b>Type</b>	None ..... Carbon film S ..... Solid R ..... Oxide metal film M ..... Metal film W ..... Cement FR ..... Fusible

Eg. 1

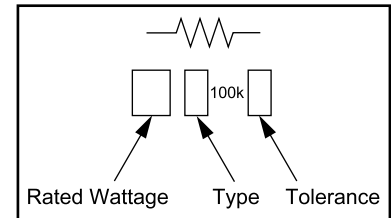


Fig. 3-1-1

#### 1-3. Capacitance Indication

<b>Symbol</b>	$\begin{array}{l} \text{---} \text{  } \text{---} \text{+} \\ \text{---} \text{  } \text{---} \text{NP} \\ \text{---} \text{  } \text{---} \\ \text{---} \text{  } \text{---} \text{M} \\ \text{---} \text{  } \text{---} \text{p} \end{array}$ ..... ..... ..... ..... .....
<b>Unit</b>	None ..... F $\mu$ ..... $\mu F$ p ..... pF
<b>Rated voltage</b>	None ..... 50V For other than 50V and electrolytic capacitors, described in the Circuit Diagram.
<b>Tolerance</b>	(1) Ceramic, plastic, and film capacitors of which capacitance are more than 10 pF. None ..... $\pm 5\%$ or more B ..... $\pm 0.1\%$ C ..... $\pm 0.25\%$ D ..... $\pm 0.5\%$ F ..... $\pm 1\%$ G ..... $\pm 2\%$ (2) Ceramic, plastic, and film capacitors of which capacitance are 10 pF or less. None ..... more than $\pm 5$ pF B ..... $\pm 0.1$ pF C ..... $\pm 0.25$ pF (3) Electrolytic, Trimmer Tolerance is not described.
<b>Temperature characteristic (Ceramic capacitor)</b>	None ..... SL For others, temperature characteristics are described. (For capacitors of 0.01 $\mu F$ and no indications are described as F.)
<b>Static electricity capacity (Ceramic capacitor)</b>	Sometimes described with abbreviated letters as shown in Eg. 3.

Eg. 2

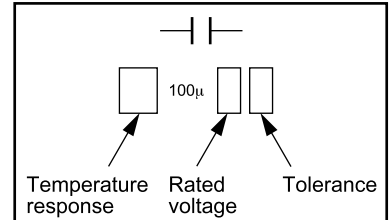


Fig. 3-1-2

Eg. 3

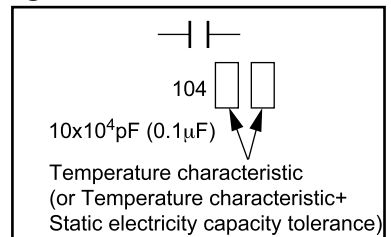


Fig. 3-1-3

1-4. Inductor Indication

Unit	None ..... H μ ..... μH m ..... mH
Tolerance	None ..... ±5% B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% K ..... ±10% M ..... ±20%

Eg. 4

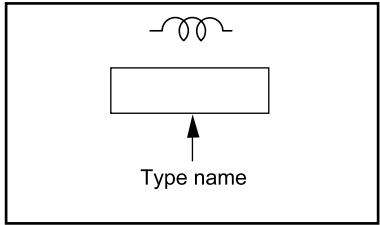


Fig. 3-1-4

1-5. Waveform and Voltage Measurement

- The waveforms for CD/DVD and RF shown in the circuit diagrams are obtained when a test disc is played back.
- All voltage values except the waveforms are expressed in DC and measured by a digital voltmeter.

1-6. Others

- The parts indicated with "NC" or "KETU" etc. are not used in the circuits of this model.

Eg. 5

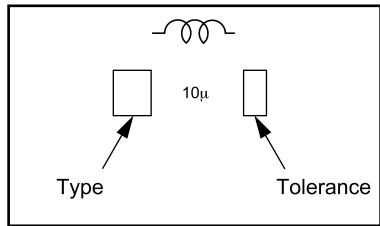
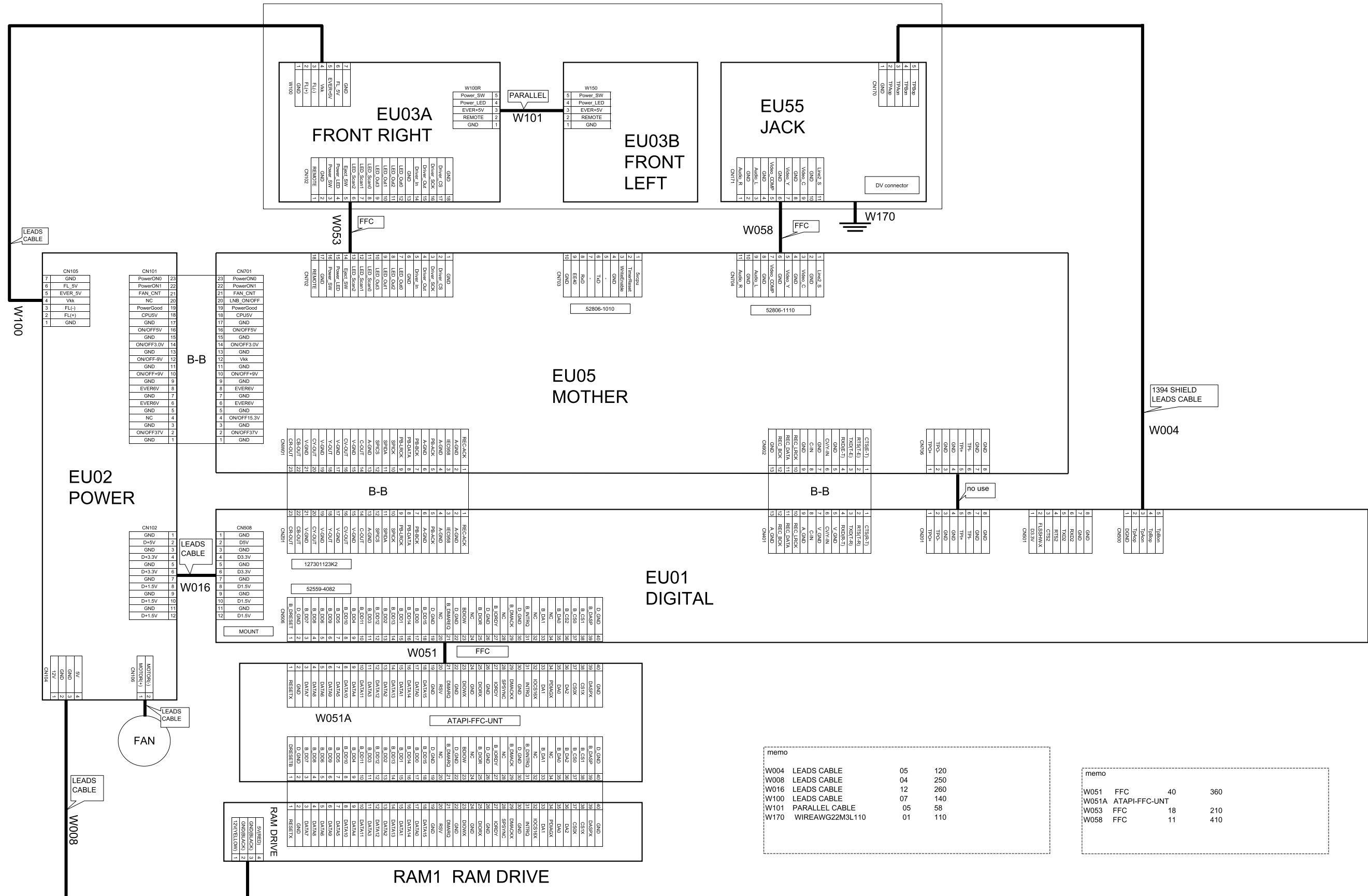


Fig. 3-1-5

## 2. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM



**Fig. 3-2-1**

3. BLOCK DIAGRAMS

3-1. Overall Block Diagram

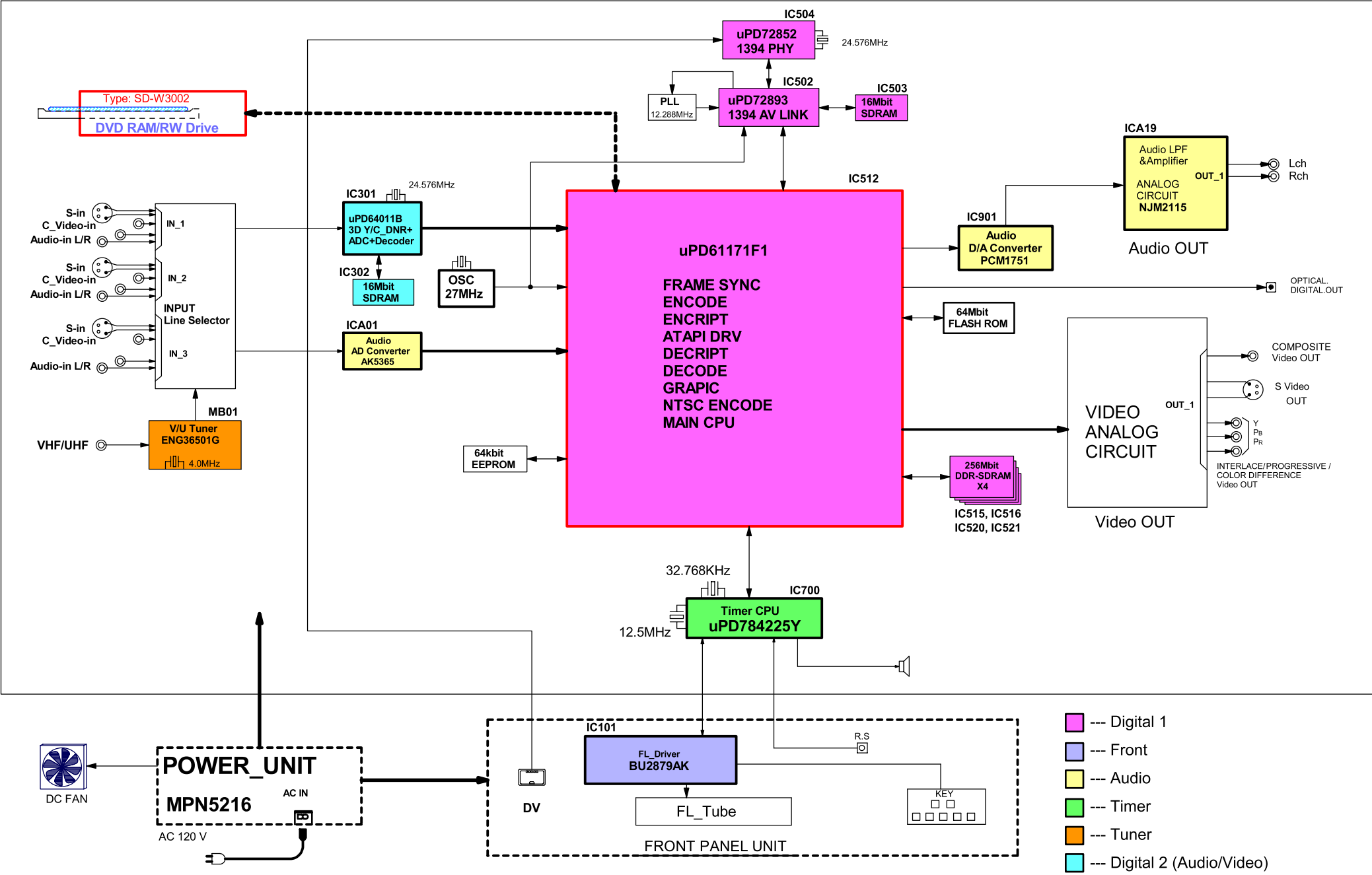
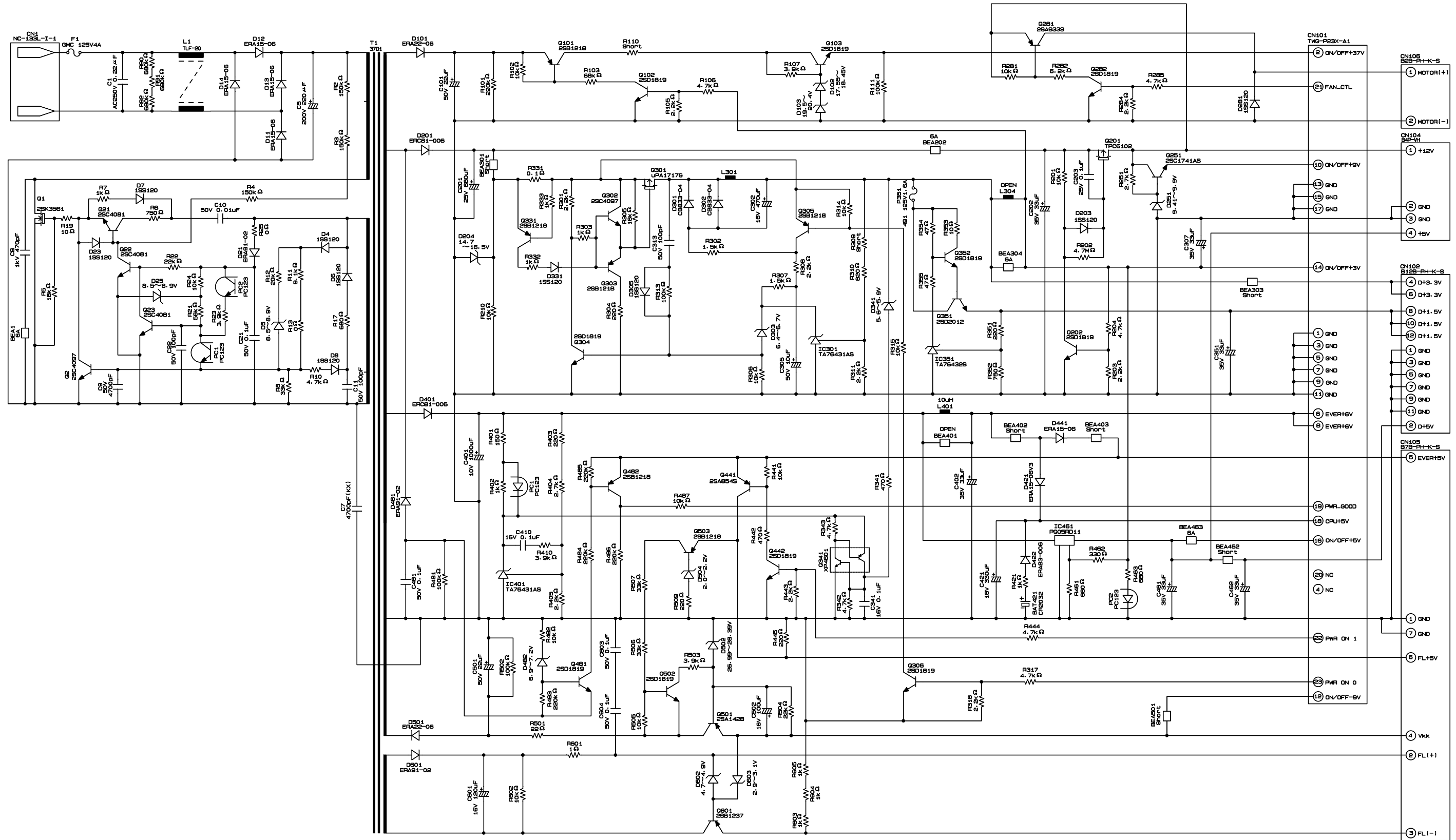


Fig. 3-3-1

## 4. CIRCUIT DIAGRAMS

#### 4-1. Power Supply Circuit Diagram



**Fig. 3-4-1**

1

2

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4

5

## 4-2. Front Circuit Diagram

### 4-2-1. Front Jack Circuit Diagram

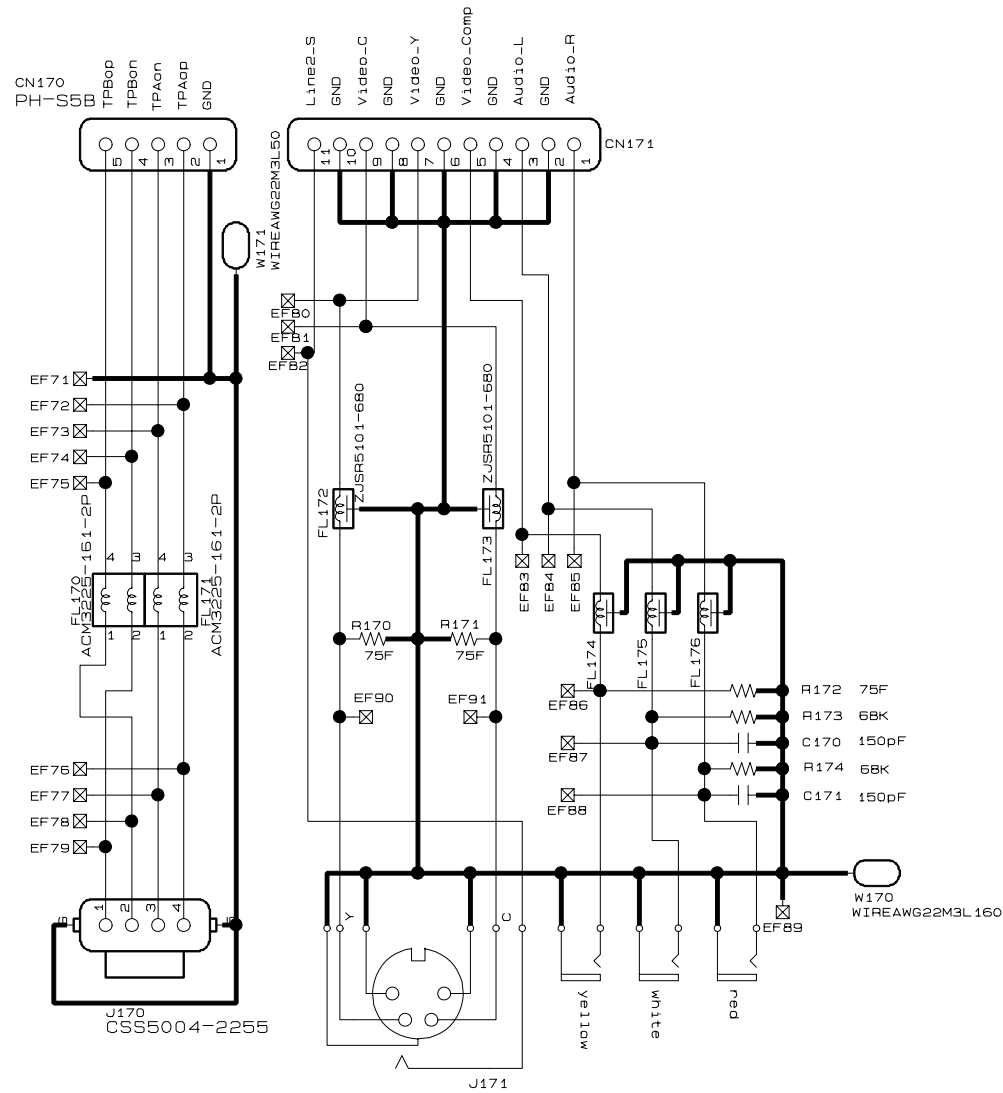


Fig. 3-4-2



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## 4-2-2. Front L Circuit Diagram

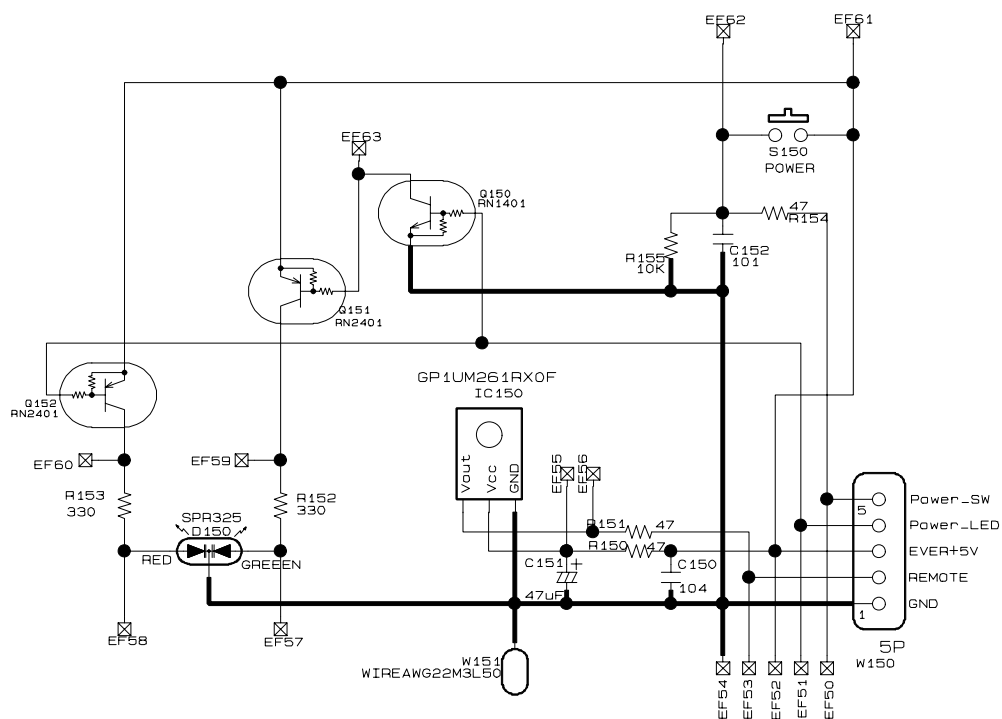


Fig. 3-4-3

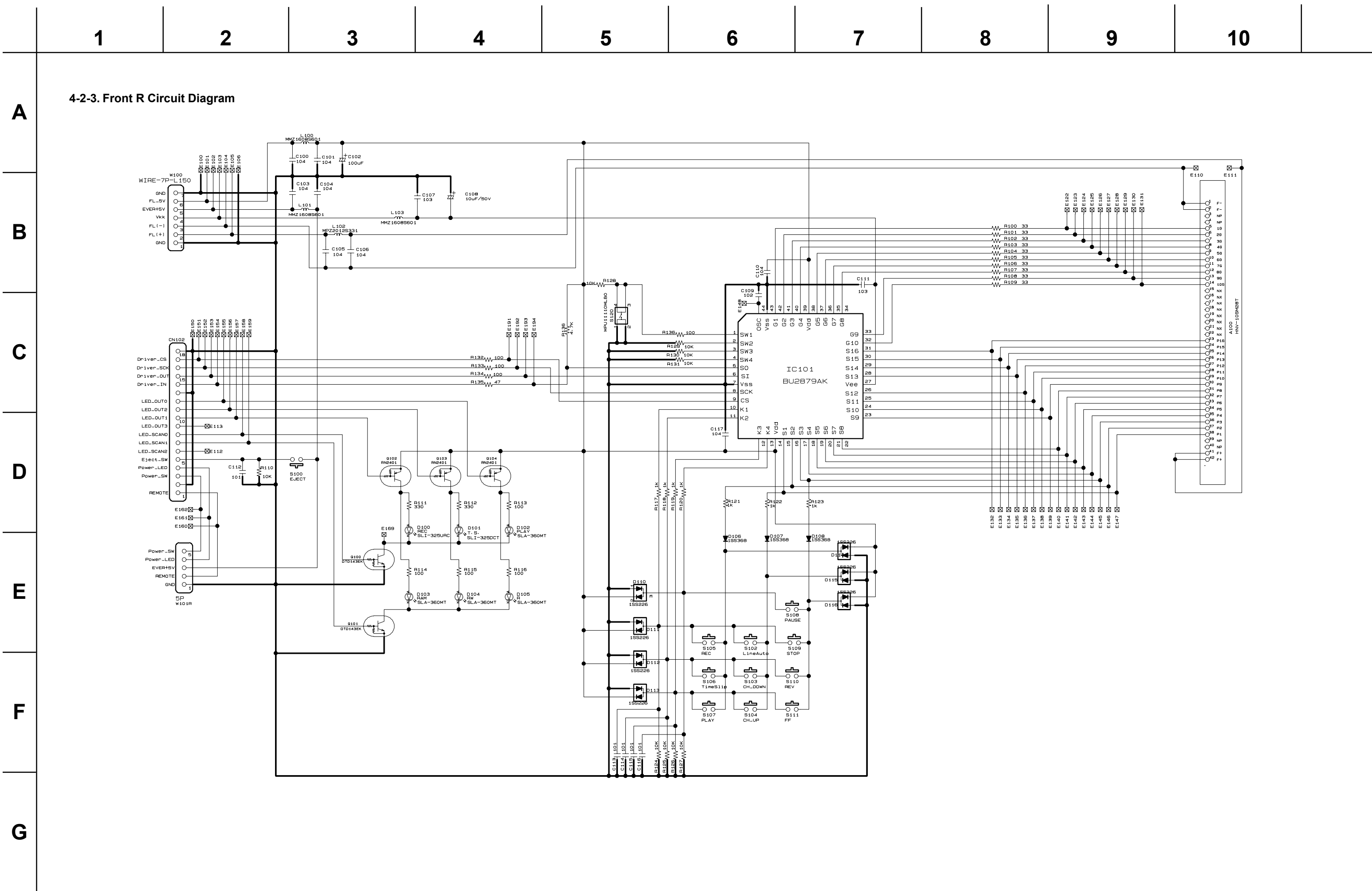
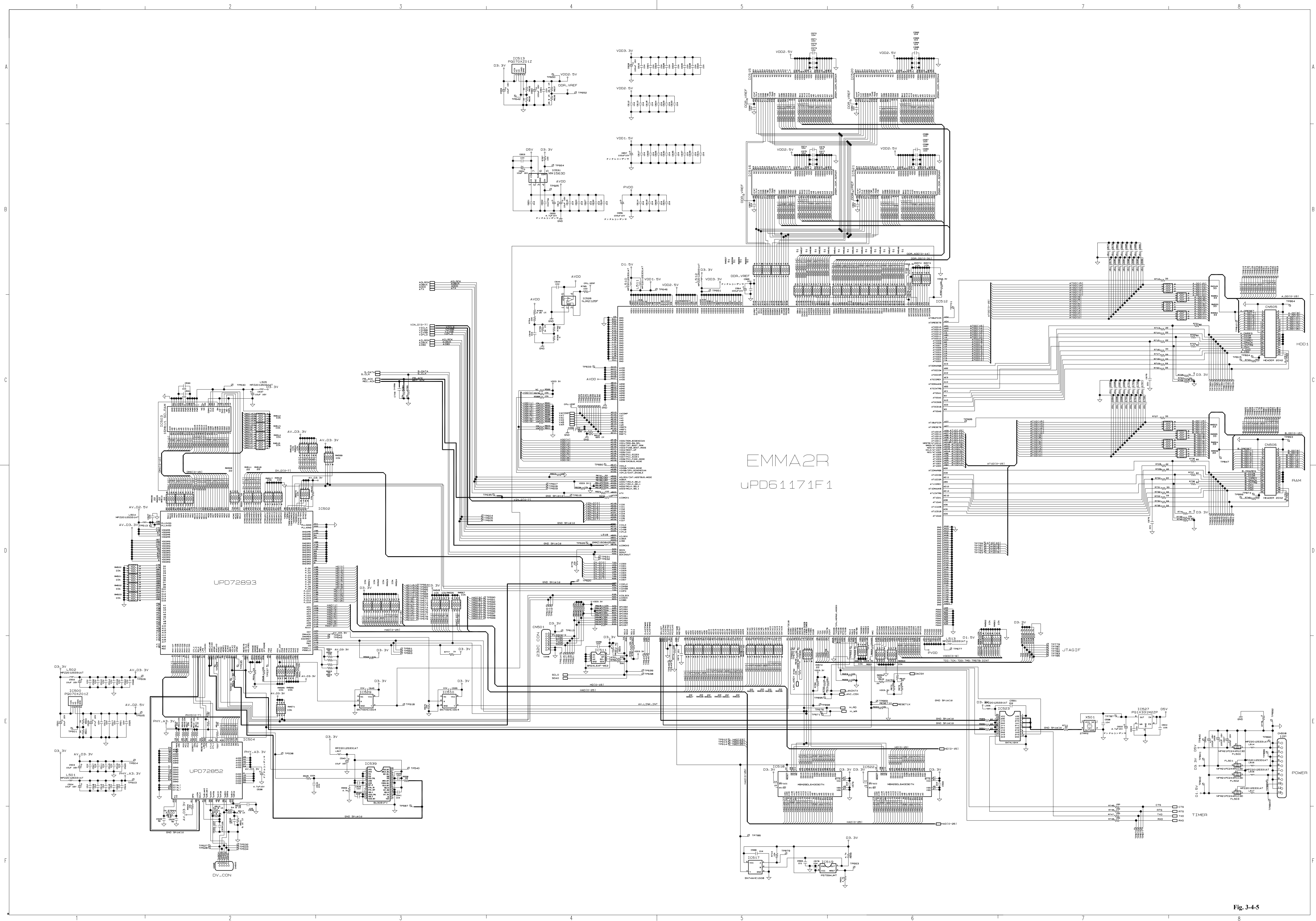


Fig. 3-4-4

### 4-3. Digital Circuit Diagram

#### 4-3-1. Digital 1 Circuit Diagram

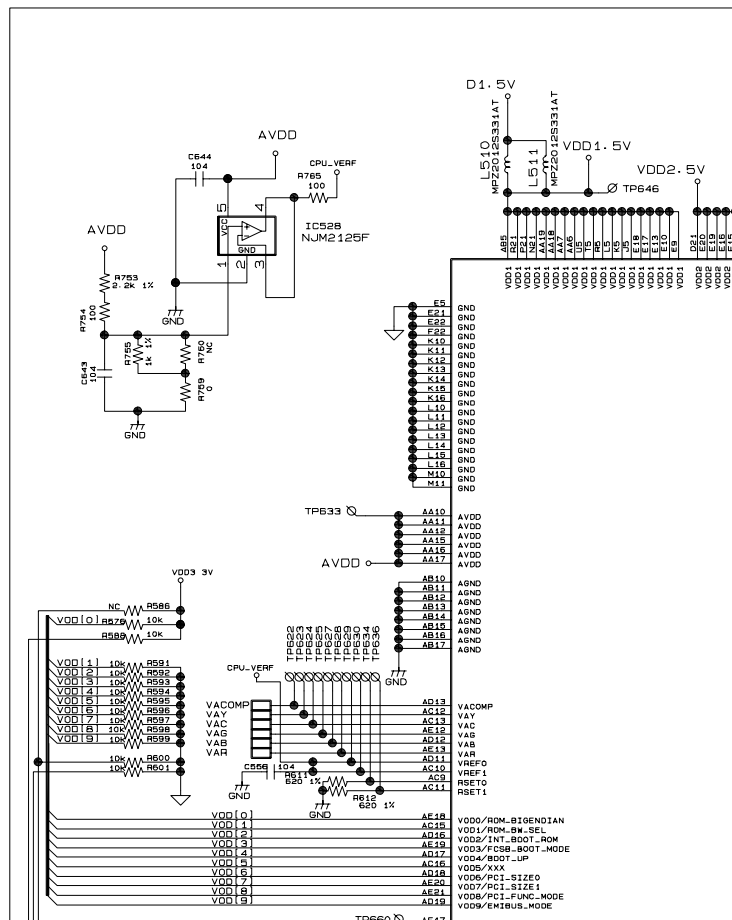
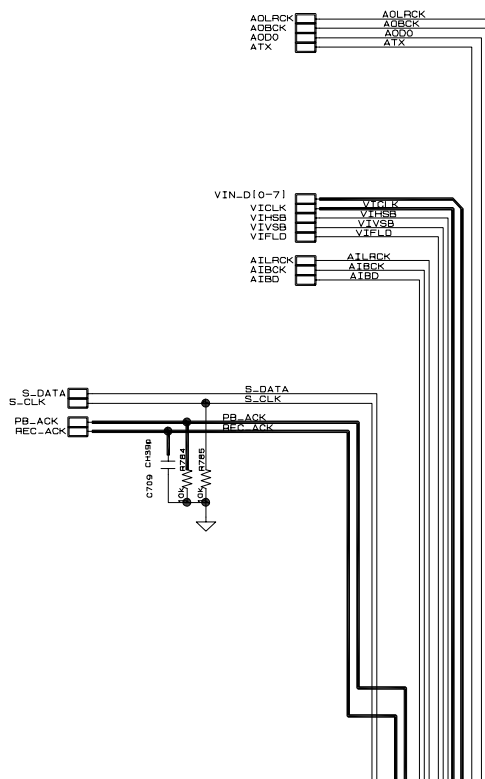
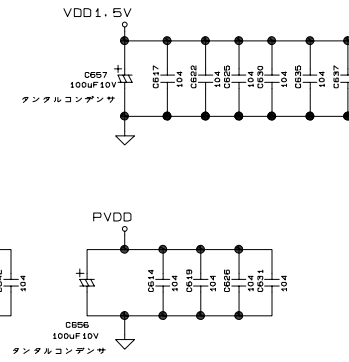
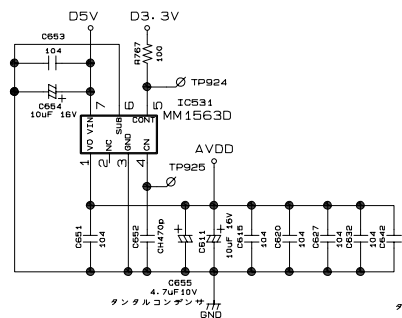
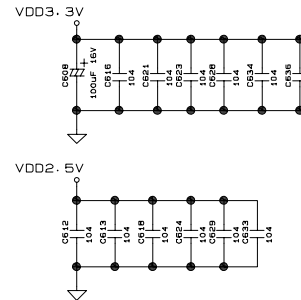


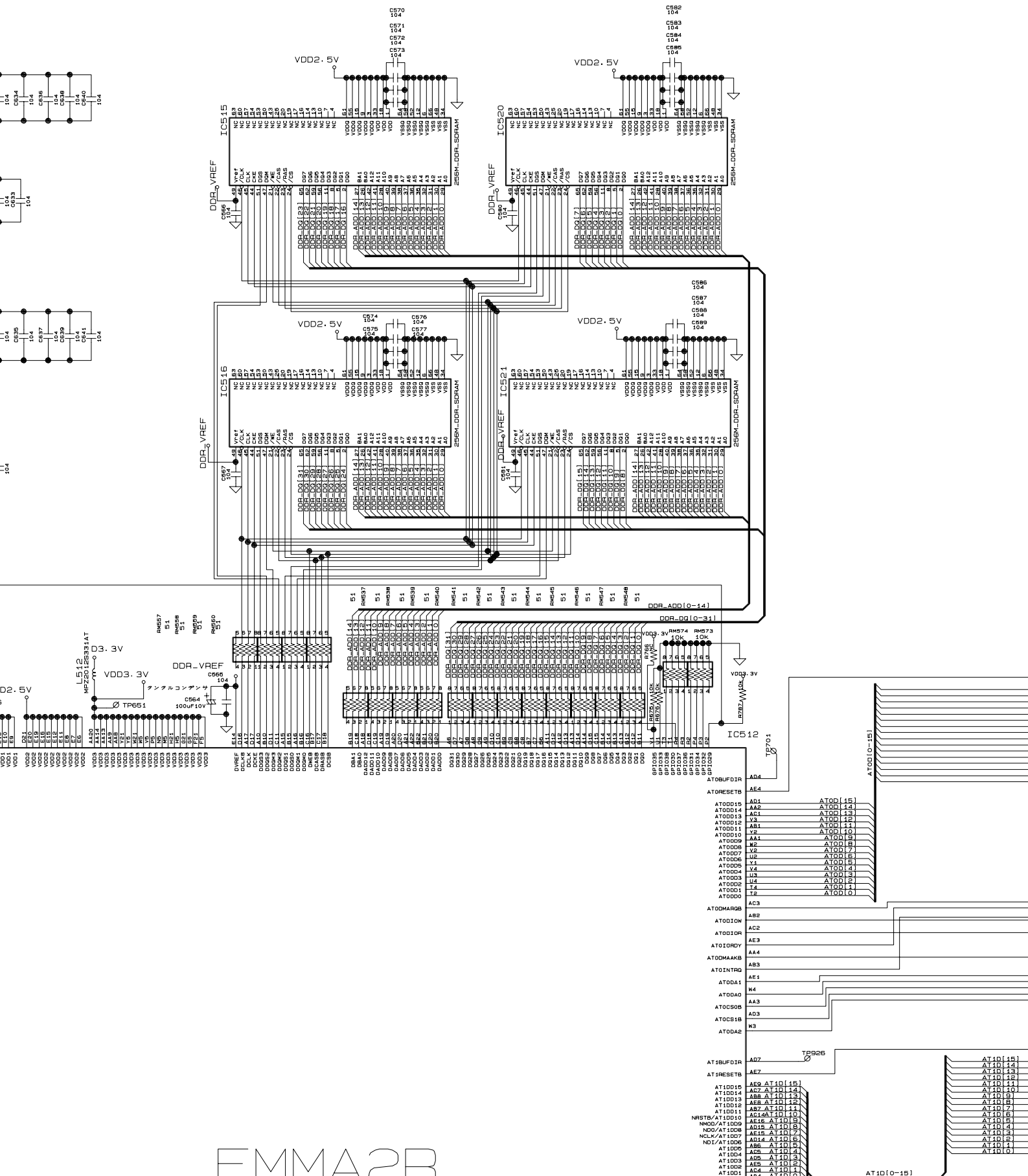
**Fig. 3-4-5**

4-3. Digital Circuit Diagram

4-3-1. Digital 1 Circuit Diagram





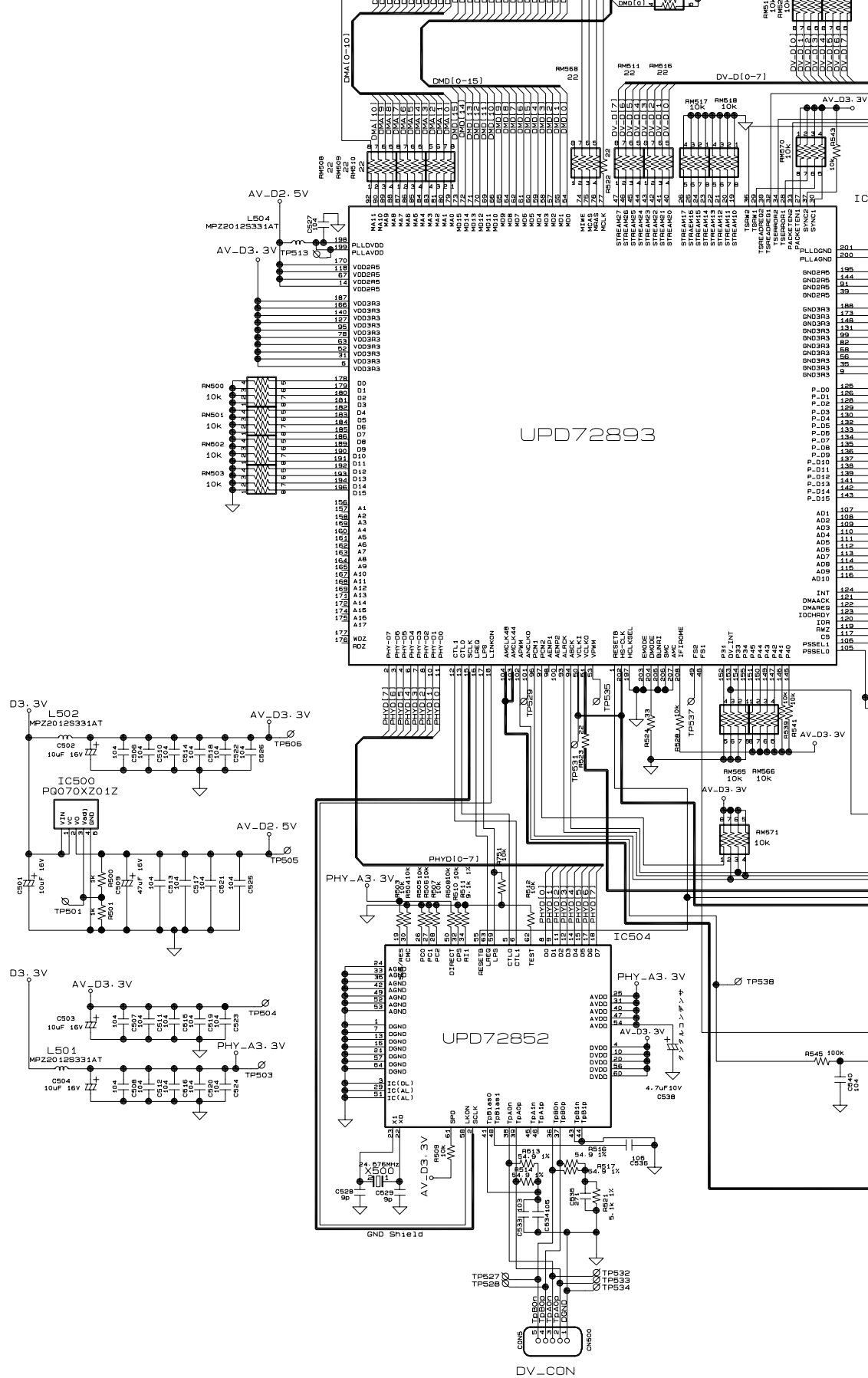




D

E

F







[illegible]

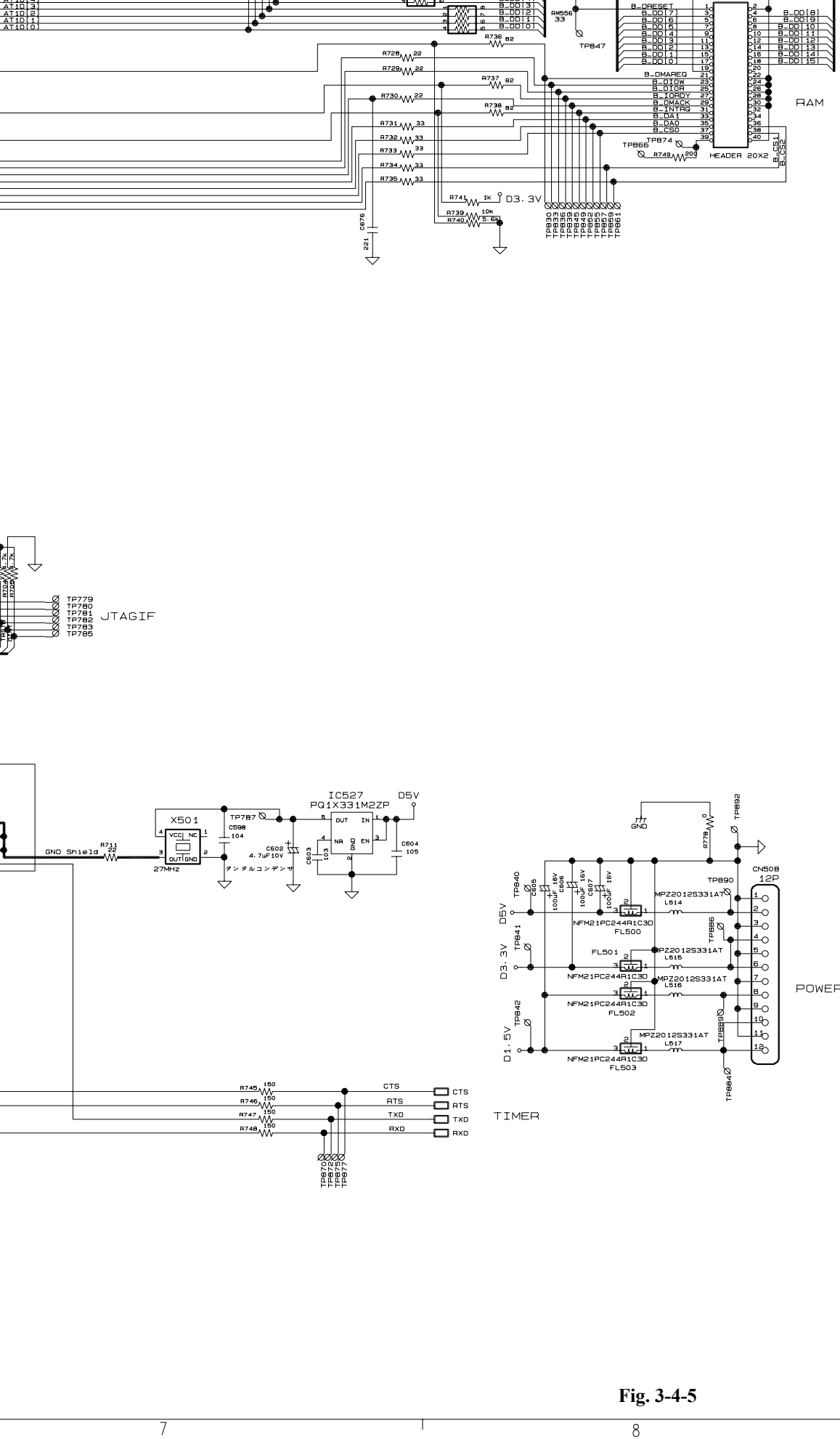


Fig. 3-4-5

4-3-2. Digital 2 Circuit Diagram

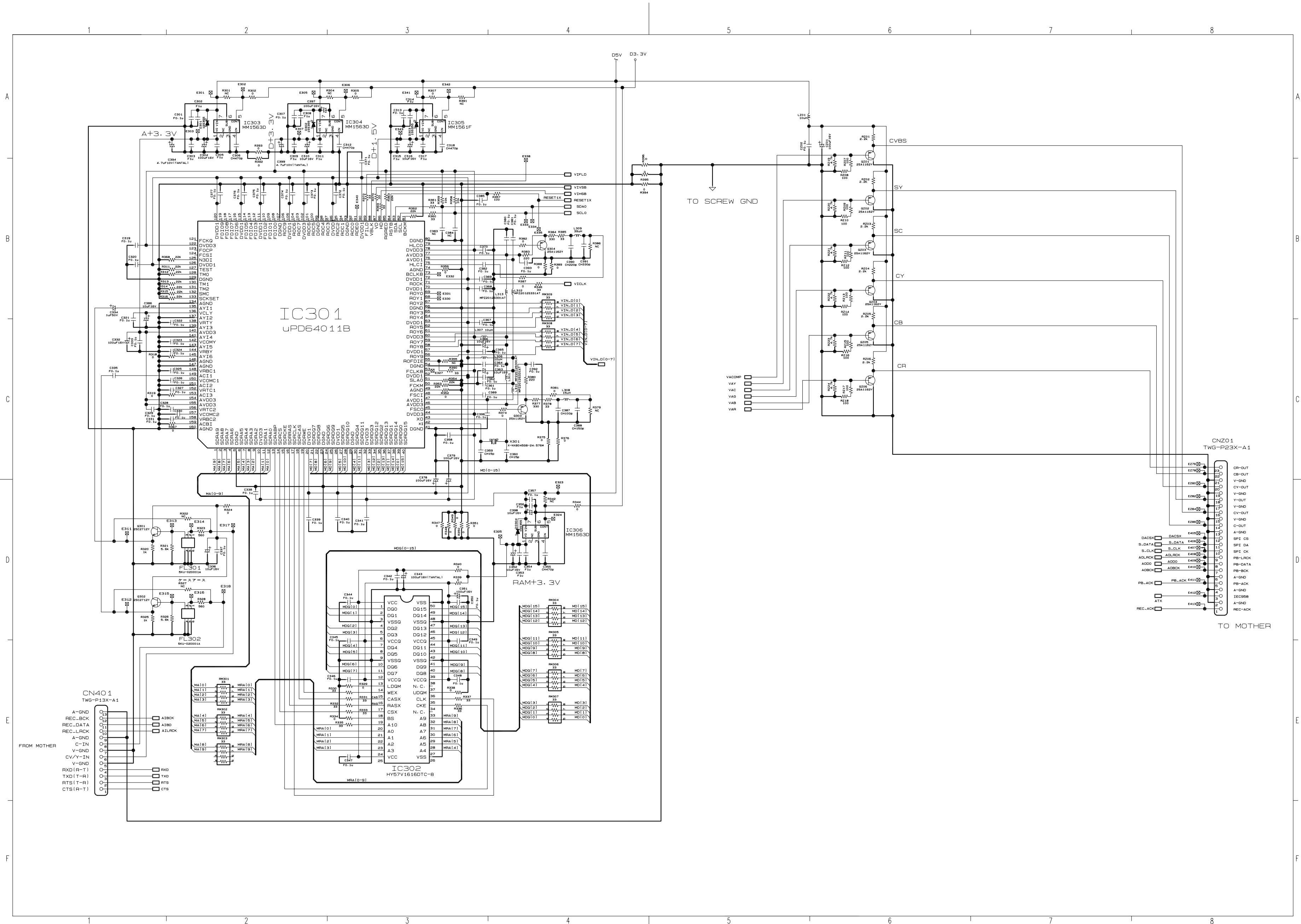
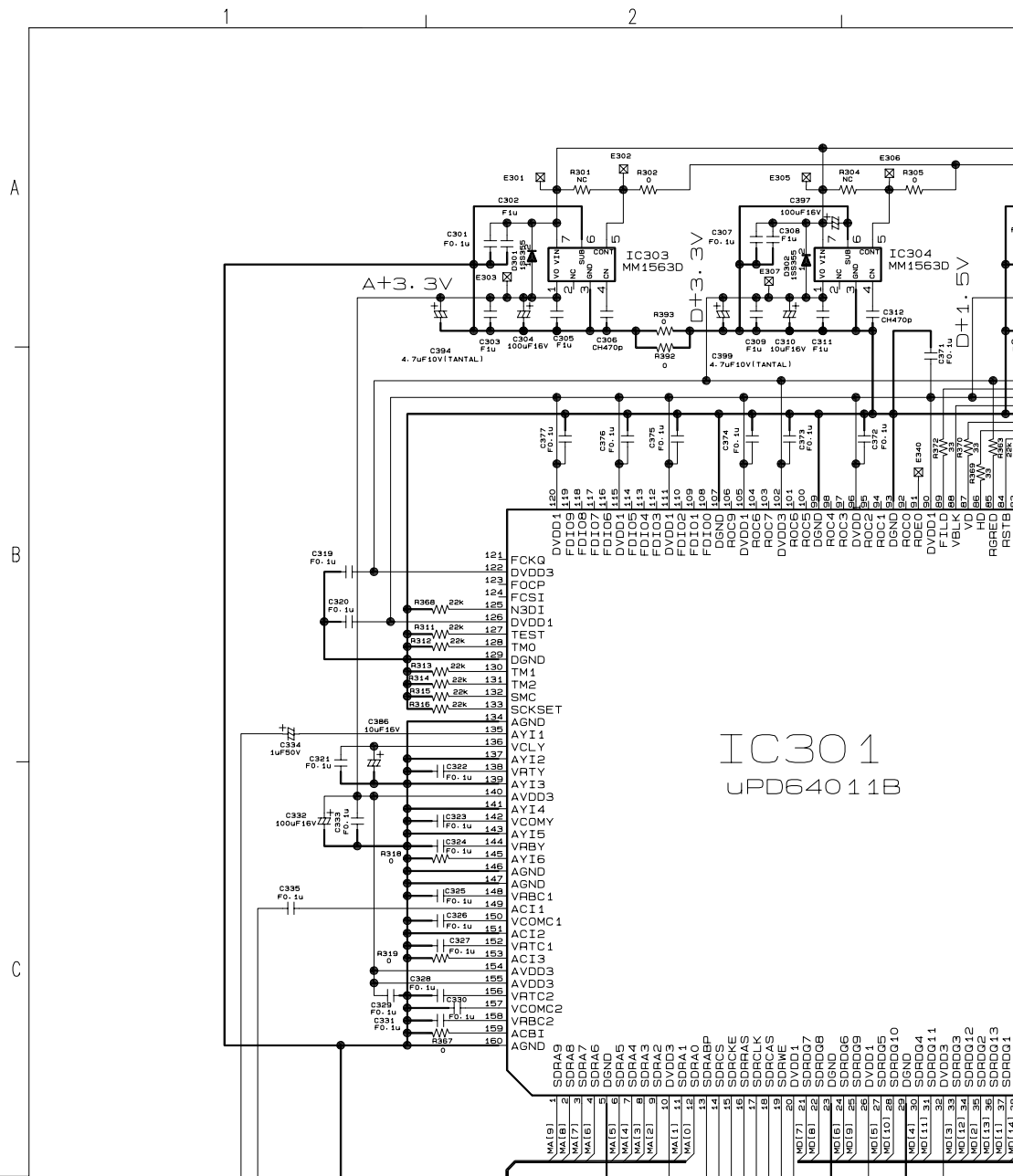
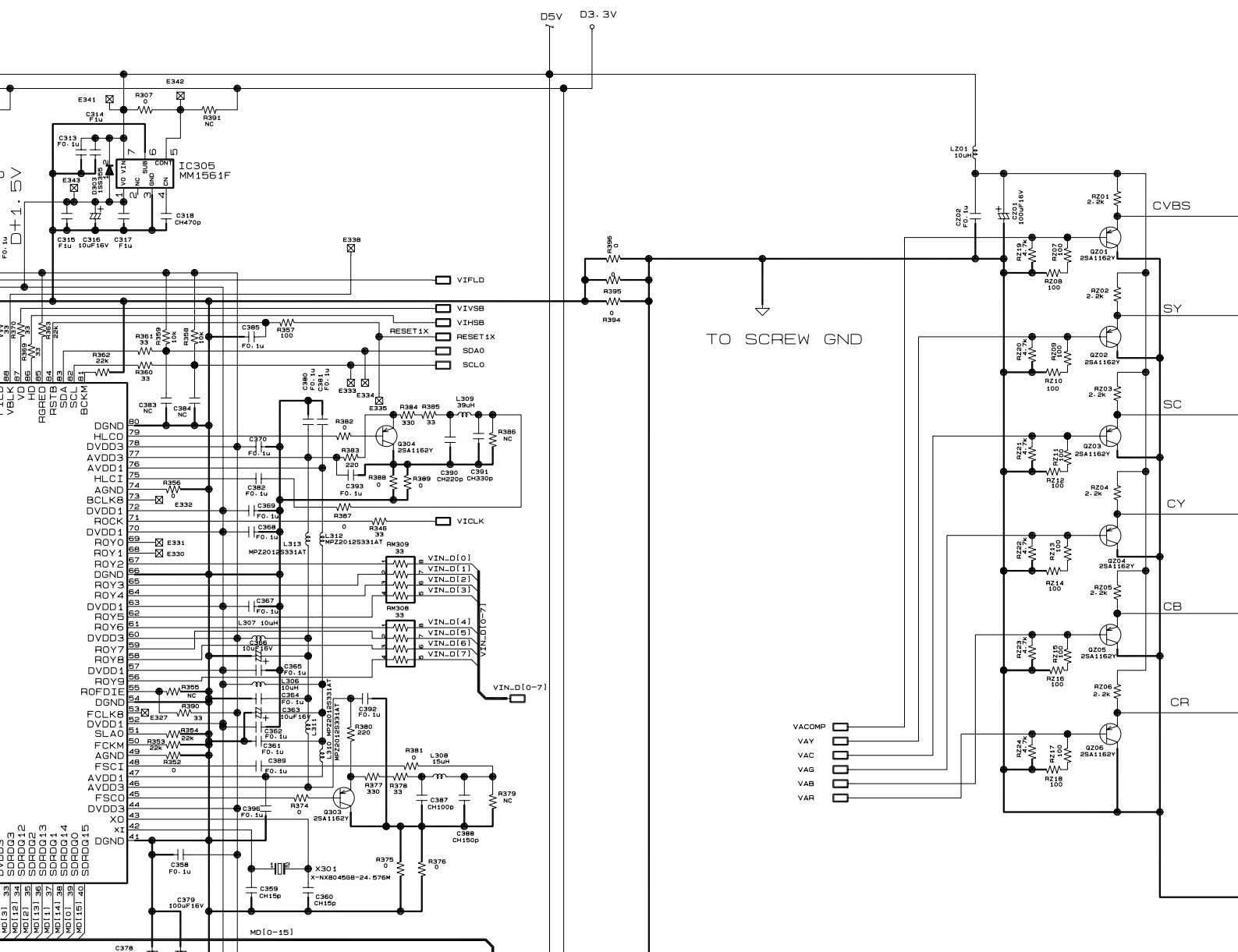


Fig. 3-4-6

## 4-3-2. Digital 2 Circuit Diagram





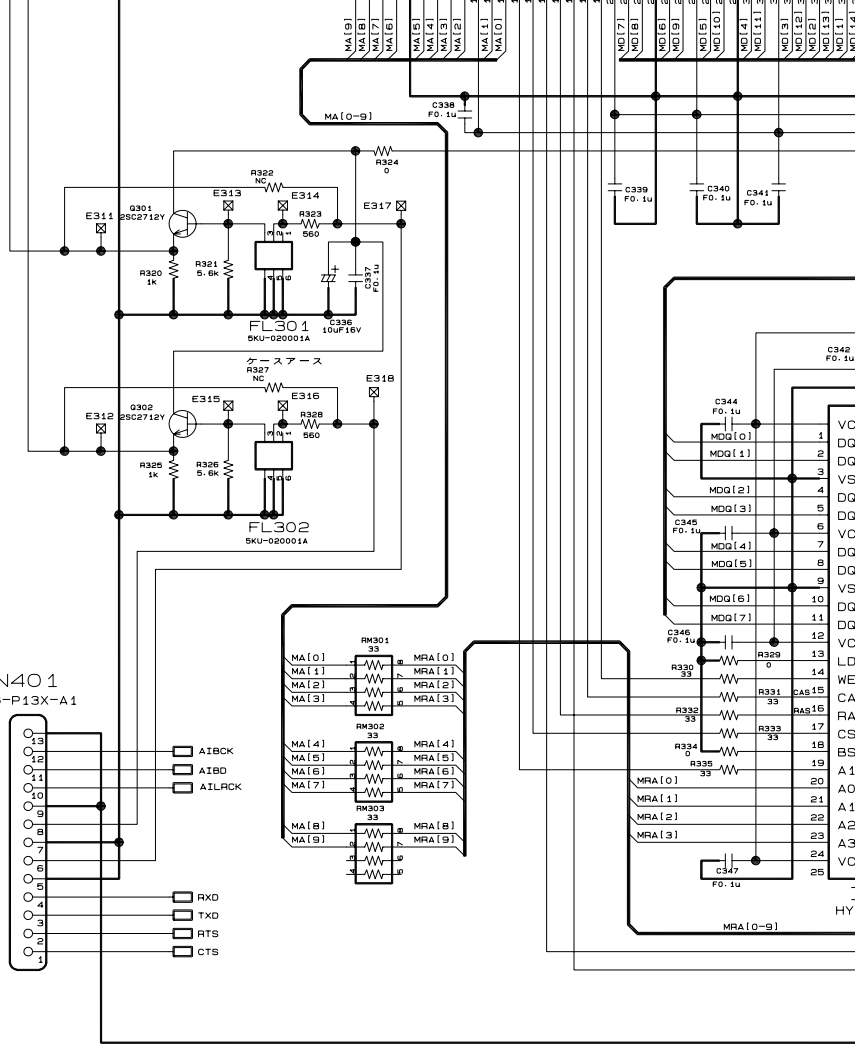
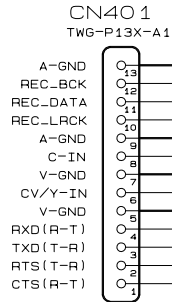


D

E

F

FROM MOTHER







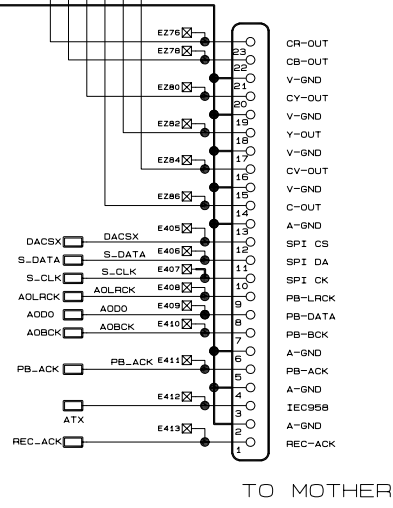
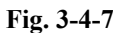


Fig. 3-4-6

#### 4-4-1. Tuner Circuit Diagram



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## 4-4-2. Timer Circuit Diagram

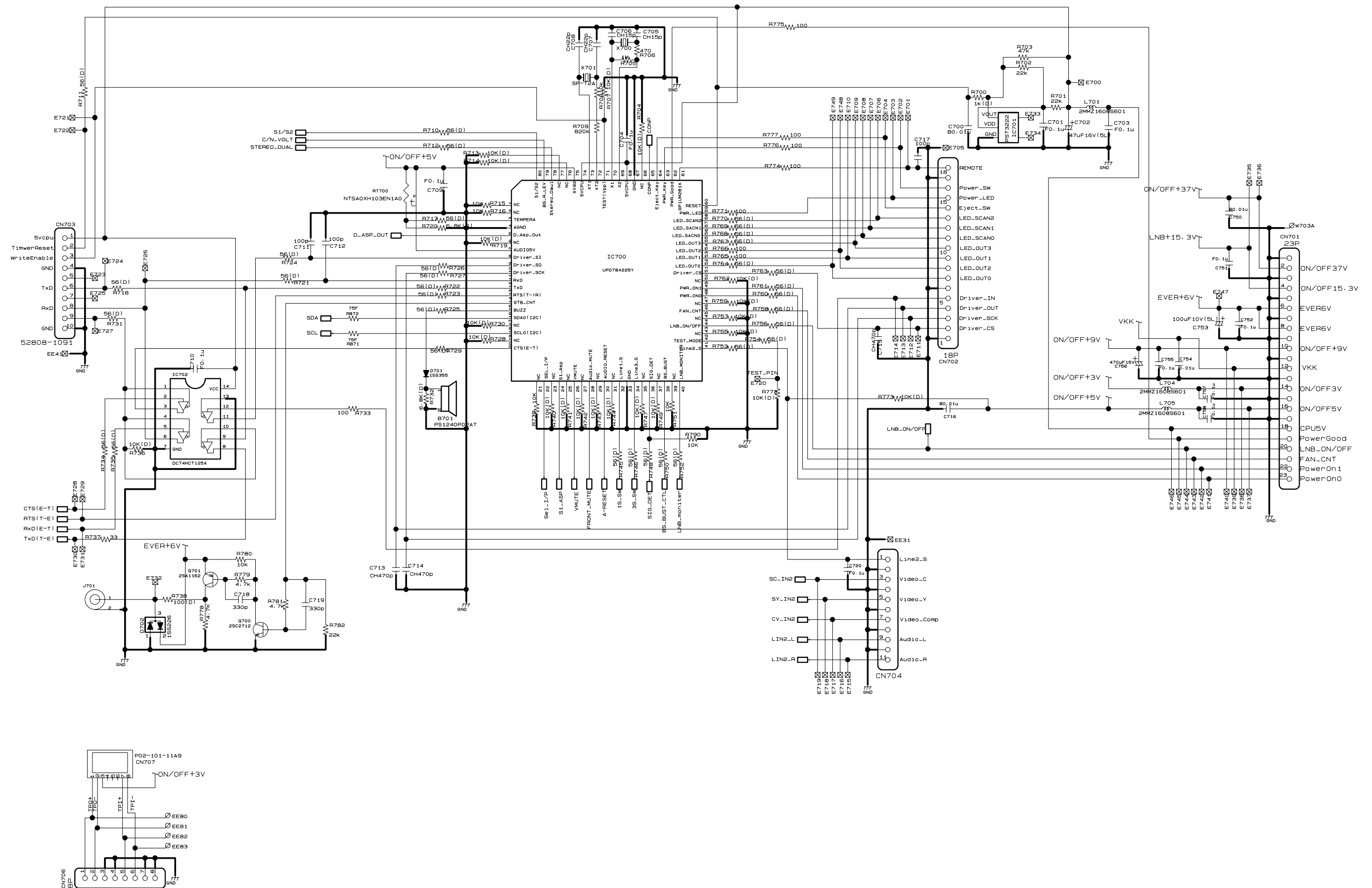


Fig. 3-4-8

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4-4-3. Audio Circuit Diagram

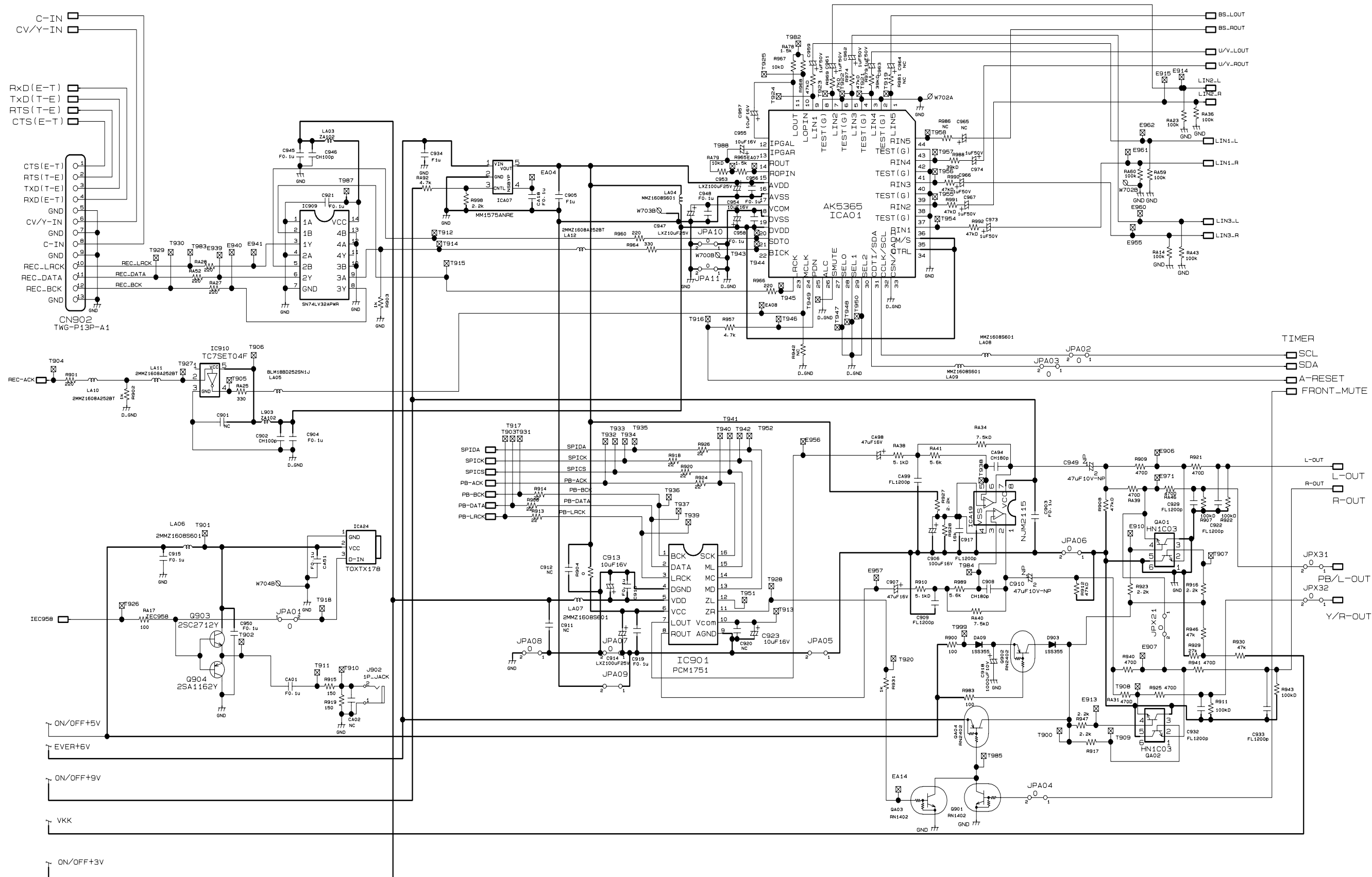


Fig. 3-4-9

1

2

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8

9

10

A

B

C

D

E

F

G

4-4-4. Video Circuit Diagram

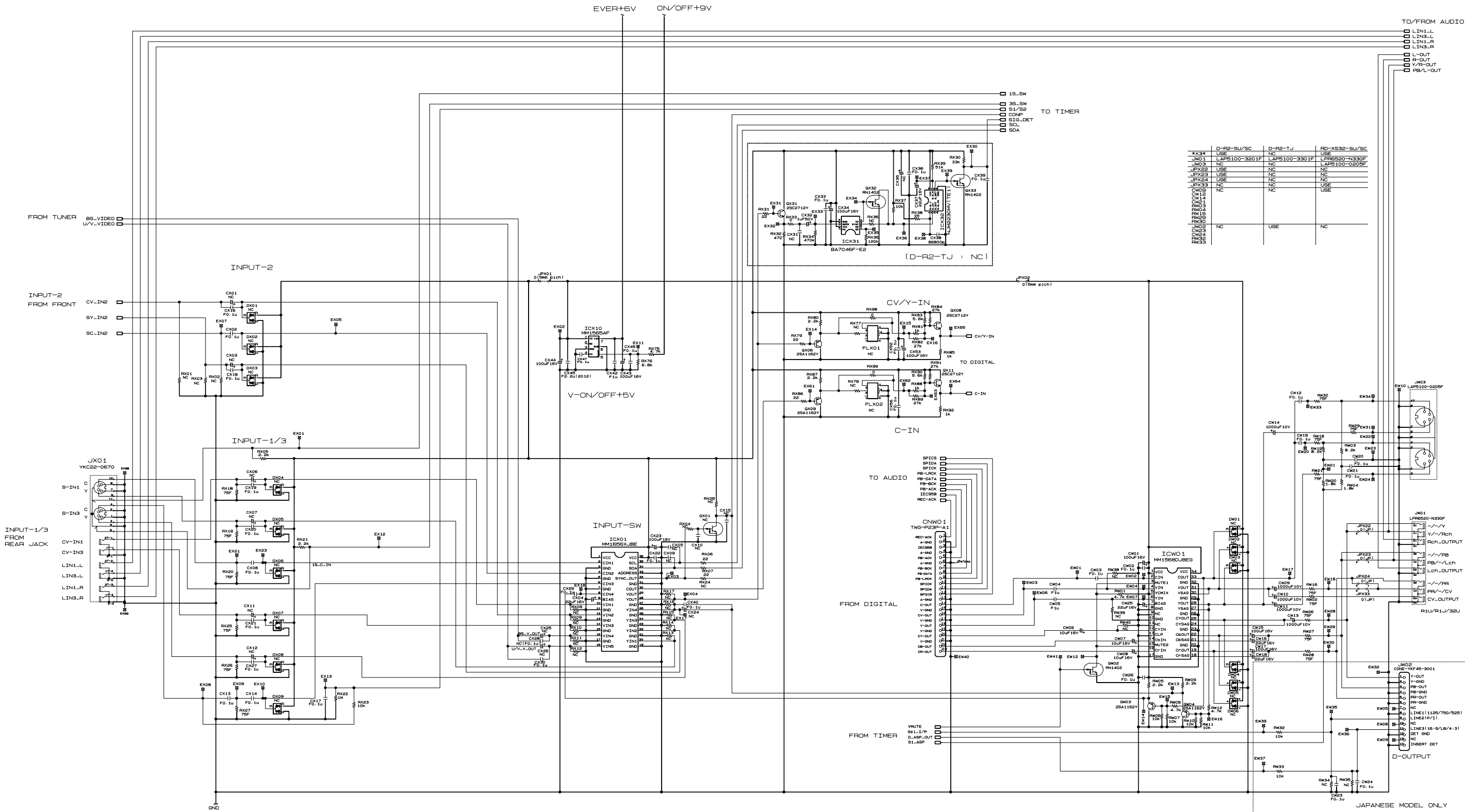
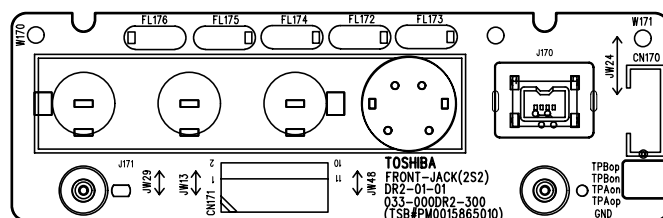


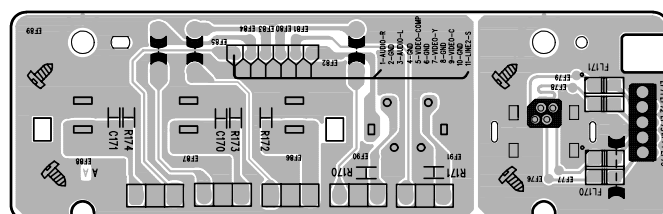
Fig. 3-4-10

## 5. PC BOARDS

### 5-1. Front Jack PC Board

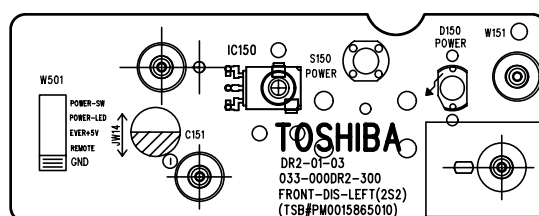


**Fig. 3-5-1 EU55 Front Jack PC Broad (Top side)**

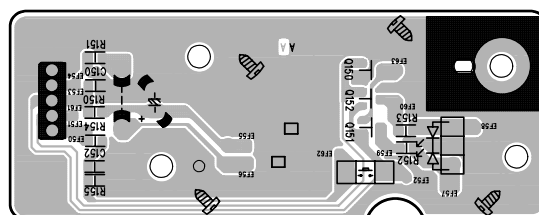


**Fig. 3-5-2 EU55 Front Jack PC Broad (Bottom side)**

## 5-2. Front (L) PC Board

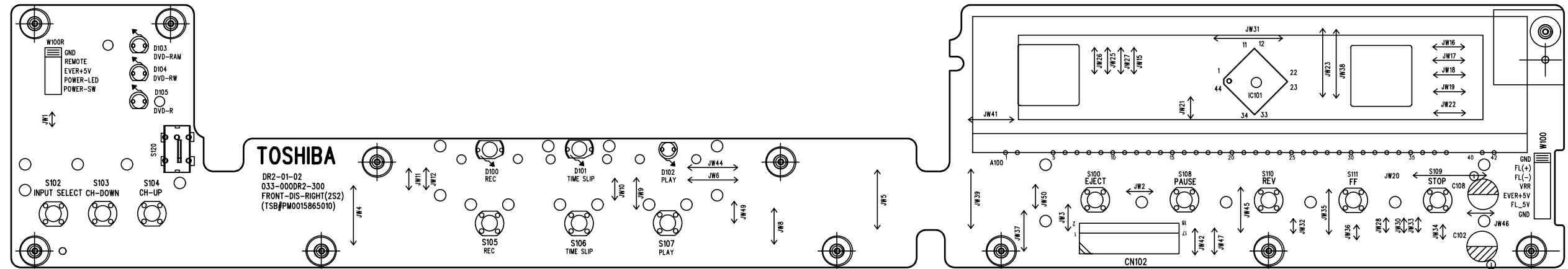


**Fig. 3-5-3 EU03B Front (L) PC Broad (Top side)**

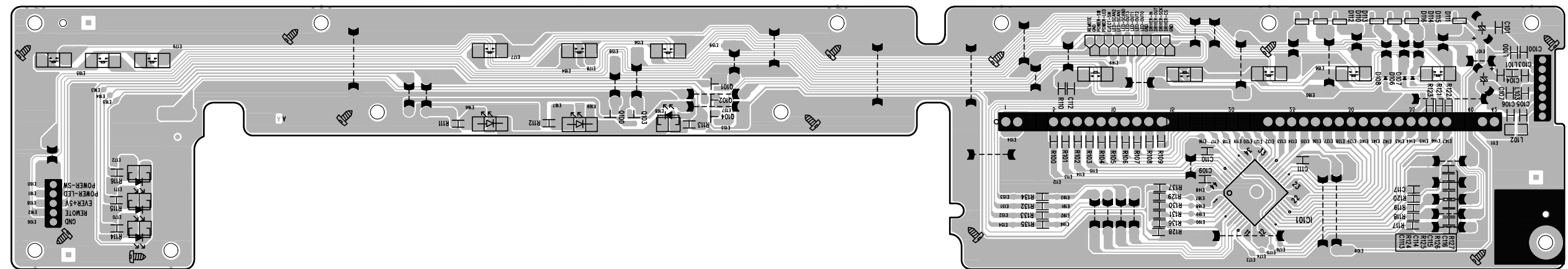


**Fig. 3-5-4 EU03B Front (L) PC Broad (Bottom side)**

### 5-3. Front (R) PC Board



**Fig. 3-5-5 EU03A Front (R) PC Broad (Top side)**



**Fig. 3-5-6 EU03A Front (R) PC Broad (Bottom side)**



5-4. Digital PC Board

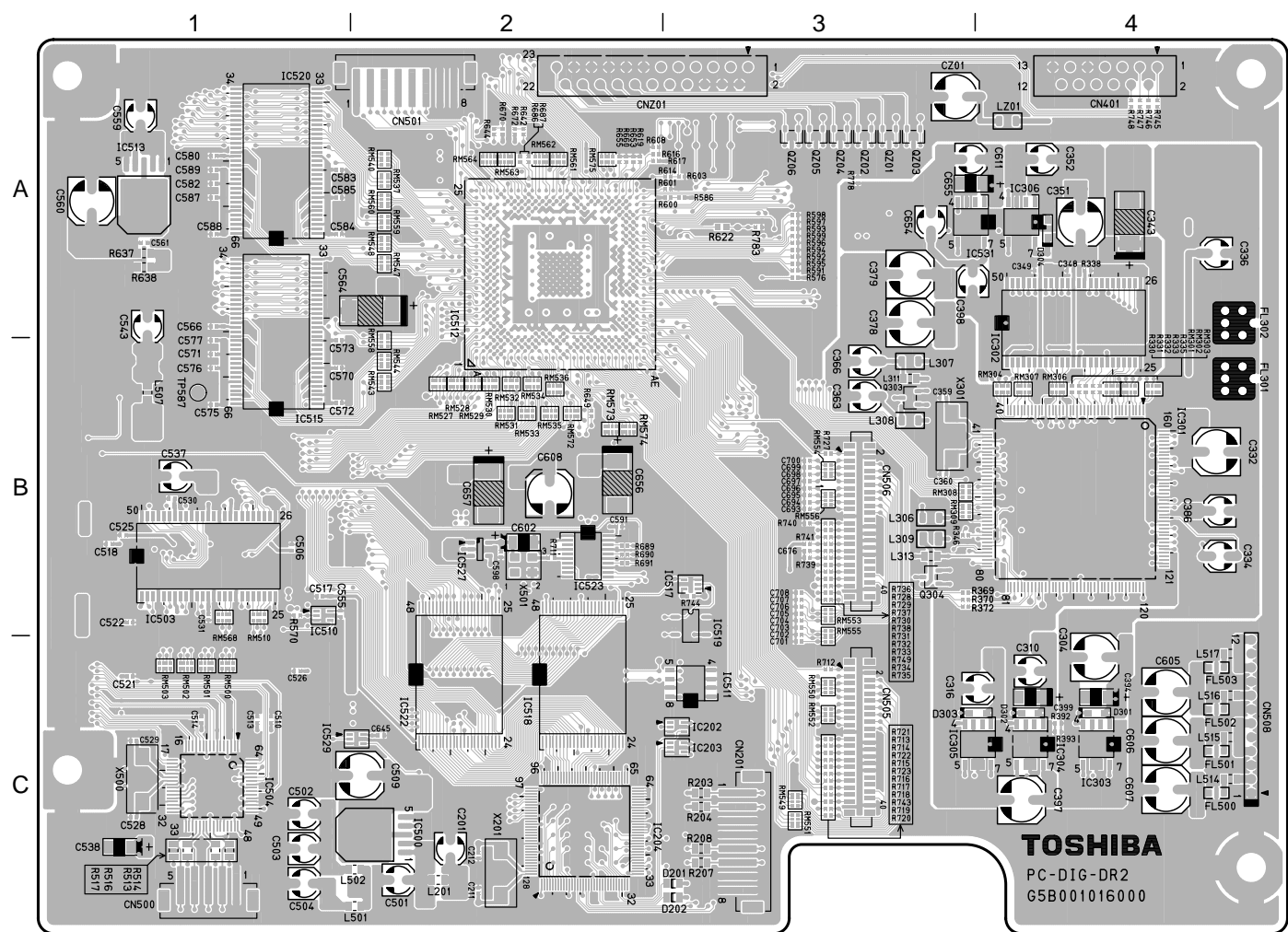


Fig. 3-5-7 EU01 Digital PC Board (Top side)

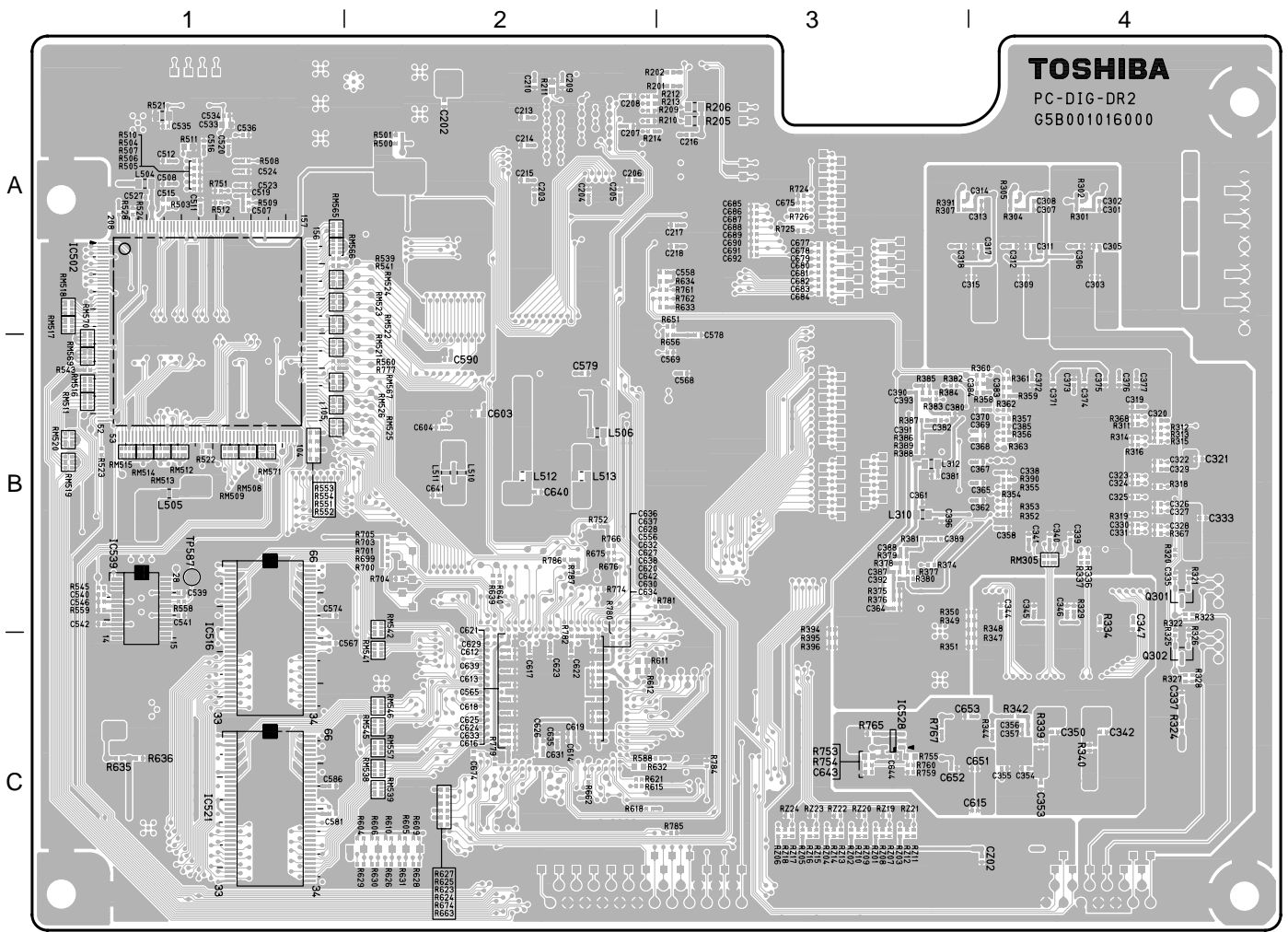


Fig. 3-5-8 EU01 Digital PC Board (Bottom side)

5-5. Mother PC Board

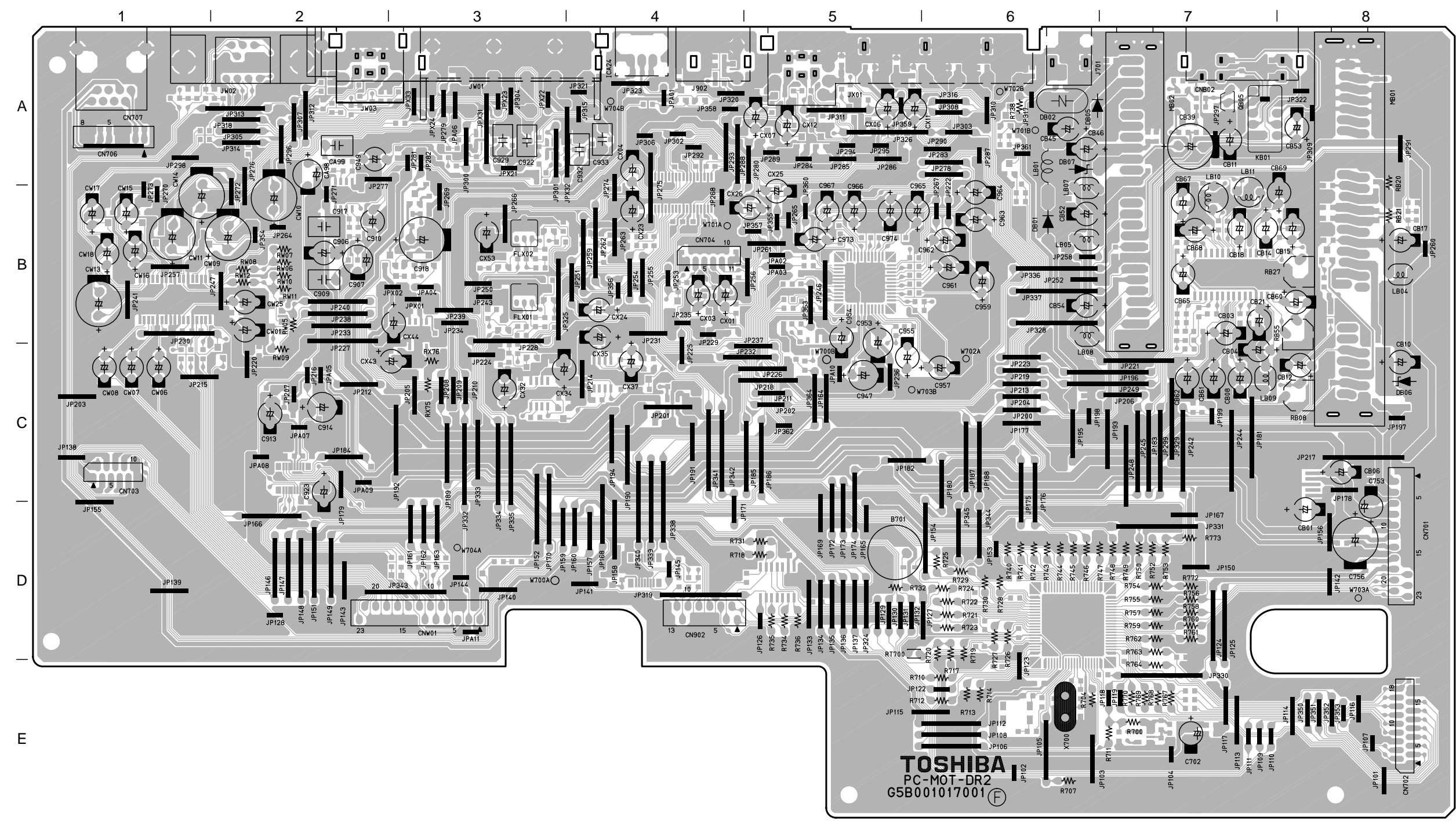


Fig. 3-5-9 EU05 Mother PC Board (Top side)



# SECTION 4 PARTS LIST

## SAFETY PRECAUTION

The parts identified by ! (  $\triangle$  ) mark are critical for safety. Replace only with part number specified.

The mounting position of replacement is to be identical with originals.

The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

## NOTICE

The part number must be used when ordering parts in order to assist in processing, be sure to include the model number and description.

## ABBREVIATIONS

### 1. Integrated Circuit (IC)

### 2. Capacitor (Cap)

- Capacitance Tolerance (for Nominal Capacitance more than 10pF)

Table 4-2-1

Symbol	B	C	D	F	G	J	K	M	N
Tolerance %	$\pm 0.1$	$\pm 0.25$	$\pm 0.5$	$\pm 1$	$\pm 2$	$\pm 5$	$\pm 10$	$\pm 20$	$\pm 30$

Symbol	P	Q	T	U	V	W	X	Y	Z
Tolerance %	+ 100 0	+ 30 - 10	+ 50 - 10	+ 75 - 10	+ 20 - 10	+ 100 - 10	+ 40 - 20	+ 150 - 10	+ 80 - 20

Ex. 10 $\mu$ F J = 10 $\mu$ F  $\pm 5\%$

- Capacitance Tolerance (for Nominal Capacitance 10pF or less)

Table 4-2-2

Symbol	B	C	D	F	G
Tolerance pF	$\pm 0.1$	$\pm 0.25$	$\pm 0.5$	$\pm 1$	$\pm 2$

Ex. 10pF G = 10pF  $\pm 2$ pF

### 3. Resistor (Res)

- Resistance tolerance

Table 4-3-1

Symbol	B	C	D	F	G	J	K	M
Tolerance %	$\pm 0.1$	$\pm 0.25$	$\pm 0.5$	$\pm 1$	$\pm 2$	$\pm 5$	$\pm 10$	$\pm 20$

Ex. 470 $\Omega$  J = 470 $\Omega$   $\pm 5\%$

## 4. EXPLODED VIEWS

### 4-1. Packing Assembly

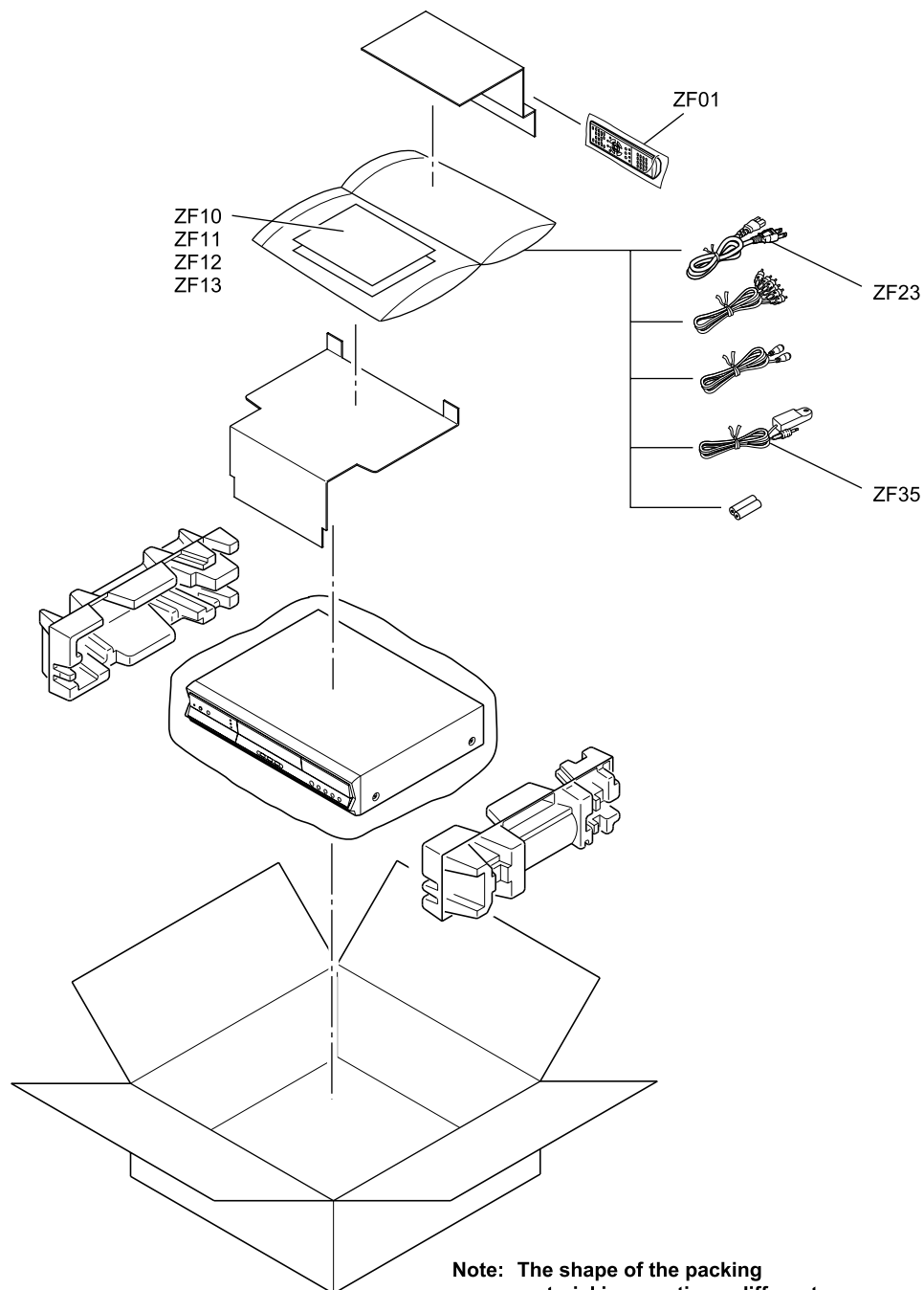


Fig. 4-4-1

4-2. Chassis Assembly

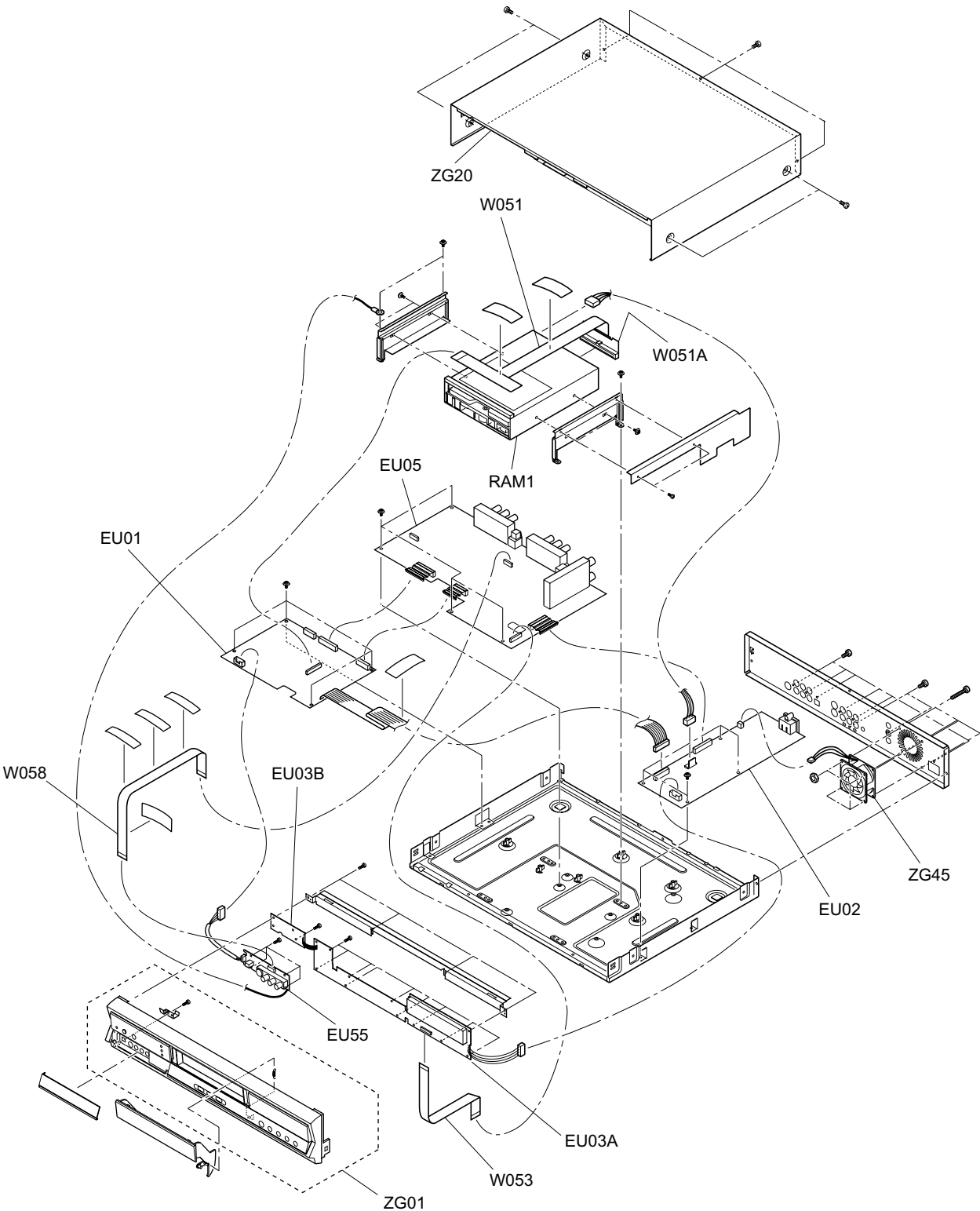


Fig. 4-4-2

5. PARTS LIST

LOCATION PART

NUMBER NUMBER DESCRIPTION

- MECHANICAL PARTS -

!	RAM1	P000391340	DVD-RAM	SD-W3002-TC	
	W051	P000387340	Cable,Flexible	FFC,40P,L360	
	W051A	P000401270	Conv Unit,ATAPI-FFCFFC-RDXS41E		
	W053	P000401310	Cable.Flexible	FFC,18P,L210	
	W058	P000401320	Cable.Flexible,Shield,FFC,11P,L410		
	ZF01	P000402810	Remote Control UnitSE-R0123		
!	ZF10	P000398340	Owners Manual,OP-DR2UC	English	
!	ZF11	P000398330	Owners Manual,ST-DR2UC	English	
!	ZF12	P000398350	Owners Manual,Q-DR2UC	English	
!	ZF13	P000398360	Owners Manual,Q-DR2U(DR2SU)	Spanish	
!	ZF10	P000398380	Owners Manual,OP-DR2C(DR2SC)	French	
!	ZF11	P000398370	Owners Manual,ST-DR2C(DR2SC)	French	
!	ZF23	79088007	Power Cord		
	ZF35	P000401300	IR-Blaster	RWS1000-0052L	
	ZG01	P000402880	Front Panel,D-R2SU/SC		
	ZG01	P000404690	Front panel,D-KR2SU		
	ZG20	P000402800	Cover,Top		
-	ZG45	P000401260	Fan,DC	5025LL12SND2	

LOCATION NUMBER	PART NUMBER	DESCRIPTION	
		- ELECTRICAL PARTS -	
EU01	P000402830	PC Board Assy	Digital,D-R2SU/SC
EU01	P000404680	PC Board Assy	Digital,D-KR2SU
		- INTEGRATED CIRCUITS -	
IC301	P000401180	IC	UPD64011BGM-8ED
IC302	P000391160	IC	K4S161622D-TC80000
IC303	P000377900	IC	MM1563DFBE
IC304	P000377900	IC	MM1563DFBE
IC305	P000391250	IC	MM1561FFBE
IC306	P000377900	IC	MM1563DFBE
IC500	P000391280	IC	PQ070XZ01ZPH
IC502	P000391220	IC	UPD72893AGD
IC503	79040163	IC	MT48LC1M16A1TG
IC504	P000391230	IC	UPD72852AGB-8EU
IC510	P000378050	IC	SN74AHC1G04HDCKR
IC513	P000391280	IC	PQ070XZ01ZPH
IC515	P000391210	IC	K4H560838D-TCB000
IC516	P000391210	IC	K4H560838D-TCB000
IC517	P000378040	IC	SN74AHC1G08HDCKR
IC518	P000391170	IC	MBM29DL640E90TN
IC519	79040306	IC	PST594JMT
IC520	P000391210	IC	K4H560838D-TCB000
IC521	P000391210	IC	K4H560838D-TCB000
IC523	P000377920	IC	SN74LV244APWR
IC527	P000391290	IC	PQ1X331M2ZPH
IC528	P000391240	IC	NJM2125F
IC529	P000378050	IC	SN74AHC1G04HDCKR
IC531	P000377900	IC	MM1563DFBE
IC539	P000401220	IC	BU3081FV-E2
		- TRANSISTORS -	
Q301	79050016	Transistor,Chip	2SC2712
Q302	79050016	Transistor,Chip	2SC2712
Q303	79050018	Transistor,Chip	2SA1162
Q304	79050018	Transistor,Chip	2SA1162
QZ01	79050018	Transistor,Chip	2SA1162
QZ02	79050018	Transistor,Chip	2SA1162
QZ03	79050018	Transistor,Chip	2SA1162
QZ04	79050018	Transistor,Chip	2SA1162
QZ05	79050018	Transistor,Chip	2SA1162
QZ06	79050018	Transistor,Chip	2SA1162
		- DIODES -	
D301	79060019	Diode,Chip	1SS355
D302	79060019	Diode,Chip	1SS355
D303	79060019	Diode,Chip	1SS355
D304	79060019	Diode,Chip	1SS355
		- MISCELLANEOUS -	
X301	79089168	Oscillator,Crystal	
X500	79089168	Oscillator,Crystal	
X501	P000377990	Crystal	27.0M
! EU02	P000402820	PC Board Assy	Power
EU03A	P000402840	PC Board Assy	Front (R) Display
		- INTEGRATED CIRCUITS -	
IC101	P000377960	IC	BU2879AK
		- TRANSISTORS -	
Q100	P000391100	Transistor	DTD143EK
Q101	P000391100	Transistor	DTD143EK
Q102	79050089	Transistor	RN2401
Q103	79050089	Transistor	RN2401
Q104	79050089	Transistor	RN2401
		- DIODES -	
D100	79060100	Diode,LED	SLI-325URCT31
D101	79060099	Diode,LED	SLI-325DCT31
D102	79060077	Diode,LED	SLA-360MT
D103	79060077	Diode,LED	SLA-360MT
D104	79060077	Diode,LED	SLA-360MT
D105	79060077	Diode,LED	SLA-360MT
D106	79060022	Diode,Chip	1SS368
D107	79060022	Diode,Chip	1SS368
D108	79060022	Diode,Chip	1SS368
D110	79060028	Diode,Chip	1SS226
D111	79060028	Diode,Chip	1SS226
D112	79060028	Diode,Chip	1SS226
D113	79060028	Diode,Chip	1SS226
D114	79060028	Diode,Chip	1SS226
D115	79060028	Diode,Chip	1SS226
D116	79060028	Diode,Chip	1SS226
		- MISCELLANEOUS -	
A100	P000391090	Display FL	HNV-10SM28T
S100	P000391050	Switch,Tact	

LOCATION NUMBER	PART NUMBER	DESCRIPTION	
S102	P000391050	Switch,Tact	
S103	P000391050	Switch,Tact	
S104	P000391050	Switch,Tact	
S105	P000391050	Switch,Tact	
S106	P000391050	Switch,Tact	
S107	P000391050	Switch,Tact	
S108	P000391050	Switch,Tact	
S109	P000391050	Switch,Tact	
S110	P000391050	Switch,Tact	
S111	P000391050	Switch,Tact	
S120	P000377940	Switch,Push-Lever	
EU03B	P000402850	PC Board Assy	Front (L)
		- INTEGRATED CIRCUITS -	
IC150	P000402790	IR Module	GP1UM261RKOF
		- TRANSISTORS -	
Q150	79050009	Transistor,Chip	RN1401
Q151	79050089	Transistor	RN2401
Q152	79050089	Transistor	RN2401
		- DIODES -	
D150	79060033	Diode,LED	
		- MISCELLANEOUS -	
S150	P000391050	Switch,Tact	
EU05	P000402860	PC Boart Assy	Mother
		- INTEGRATED CIRCUITS -	
IC700	79040330	IC	UPD78F4225YGC-8
IC701	P000391180	IC	PST3222NR
IC702	P000391150	IC	DC74HCT125M
IC901	P000401200	IC	PCM1751DBQR
IC909	P000401170	IC	SN74LV32APWR
IC910	79100510	IC	TC7SET04F
ICA01	P000377930	IC	AK5365VQ
ICA07	79040397	IC	MM1575ANRE
ICA19	P000401190	IC	NJM2115M
ICA24	79089024	Terminal,Optical	TOTX178
ICB01	P000363360	IC	CXA2064M
ICW01	P000391260	IC	MM1568DJBEG
ICX01	P000401210	IC	MM1656XJBE
ICX10	P000395150	IC	MM1565AFBE
ICX31	79040371	IC	BA7046F
ICX32	P000363370	IC	NJM2330MV
		- TRANSISTORS -	
Q700	79050016	Transistor,Chip	2SC2712
Q701	79050018	Transistor,Chip	2SA1162
Q901	79050100	Transistor,Chip	RN1402
Q902	79050001	Transistor,Chip	RN2402
QA01	79050014	Transistor,Chip	HN1C03F
QA03	79050100	Transistor,Chip	RN1402
QA04	79050001	Transistor,Chip	RN2402
QB08	79050016	Transistor,Chip	2SC2712
QB10	P000395160	IC	PQ05DZ1UJ00H
QW02	79050100	Transistor,Chip	RN1402
QW03	79050018	Transistor,Chip	2SA1162
QW04	79050018	Transistor,Chip	2SA1162
QX06	79050018	Transistor,Chip	2SA1162
QX08	79050016	Transistor,Chip	2SC2712
QX09	79050018	Transistor,Chip	2SA1162
QX11	79050016	Transistor,Chip	2SC2712
QX31	79050016	Transistor,Chip	2SC2712
QX32	79050100	Transistor,Chip	RN1402
QX33	79050100	Transistor,Chip	RN1402
		- DIODES -	
D701	79060019	Diode,Chip	1SS355
D702	79060028	Diode,Chip	1SS226
D903	79060019	Diode,Chip	1SS355
DA09	79060019	Diode,Chip	1SS355
DB06	79060096	Diode,Zener	MTZJT-7733D
		- MISCELLANEOUS -	
B701	P000377950	Buzzer	PS1240P02AT
J701	P000401140	Jack,3.5 Phone	
JW01	P000402770	Jack,6P+2Y/C	
JX01	P000401100	Jack Board,6P+2P Y/C	
! MB01	P000363390	Tuner,V/U	ENG36501G
X700	P000391040	Crystal	
X701	P000363400	Oscillator,Crystal	
EU55	P000402870	PC Board Assy	Front Jack
		- MISCELLANEOUS -	
J170	P000387300	Jack,DV	
J171	P000402780	Jack,3P+1Y/C	



# SPECIFICATIONS

Power requirement during operation	34W
Power requirement at standby	2.7W or below (Eco mode: off) 0.8W or below (Eco mode: on)
Power supply	120V AC, 60 Hz
Mass	4.2kg
External dimension	Width 430 x Height 78 x Depth 325mm
Incoming channels	TV : 2-69CH, Cable : 1-125CH
Antenna input/output terminal	VHF/UHF : 75Ω, F Connector
Signal system	Standard NTSC Color TV system
Laser	Semiconductor laser, Wavelength : 650nm/780nm
Format	DVD -VR format DVD-Video format
Image recording system	MPEG2
Sound recording system	Dolby Digital M1, M2, Linear PCM
VIDEO input	1.0Vp-p (75Ω), Sync signal negative, Pin jack x 3 systems, 2 at rear, 1 in front
VIDEO output	1.0Vp-p (75Ω), Sync signal negative, Pin jack x 1 system, 1 at rear
S-VIDEO input	(Y) 1.0Vp-p (75Ω), Sync signal negative, (C) 0.286Vp-p (75Ω) 2 at rear, 1 in front, Mini DIN4 Pin x 3 systems
S-VIDEO output	(Y) 1.0Vp-p (75Ω), Sync signal negative, (C) 0.286Vp-p (75Ω) 1 at rear, Mini DIN4 Pin x 1 system
COMPONENT output(Y, P <sub>B</sub> , P <sub>R</sub> )	Y output (green), 1.0Vp-p (75Ω), Sync signal negative, Pin jack x 1 system P <sub>B</sub> , P <sub>R</sub> output (blue, red), 0.7Vp-p (75Ω), Pin jack x 1 system each
AUDIO input	2.0V (rms), 50kΩ or below, pin jack (L, R) x 3 systems 2 at rear, 1 in front
AUDIO output	2.0V (rms), 200Ω or above, pin jack (L, R) x 1 system 1 at rear
DIGITAL AUDIO OUTPUT BITSTREAM/PCM (OPTICAL terminal)	Optical connector x 1 system
CHANNEL CHANGE IR jack	This is for connection of the supplied IR control cable only.
DV input	4-Pin x 1 in front
Remote control	Wireless remote control (SE-R0123)
Operating conditions	Temperature: 41°F~95°F (5°C~35°C) Position: Horizontal
Clock display	12 hour digital display
Clock accuracy	Quartz (monthly deviation: approximately ±30 seconds)

- The design and specifications may change without prior notice.
- The Illustrations and screens described in this manual may be exaggerated or simplified for easy recognition and may be slightly different from the actual unit.

# **TOSHIBA CORPORATION**

1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN